

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,540 DTD _____

CHANGE NO.: 393

MODEL: 22-1 (Convair "880")

TITLE: Maximum Landing Weight, Increase of

ORIGIN: TWA Letter Higginbottom to Bordelon dated 10 November 1961

REASON FOR CHANGE: Customer requested

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * | |
|--------------------|-----------------|---------------------|----------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | | |
| Negligible | Negligible | Negligible | INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: * None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

K. V. Lamm

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES.

J. A. Thompson

ENGINEERING APPROVAL

| | |
|----------------------------|--------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED |
|----------------------------|--------------------|

| | |
|---------------------|------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

Title: Maximum Landing Weight, Increase of

Origin: TWA Letter Higginbottom to Bordelon dated 10 November 1961

Reason for Change: Customer request

Description of Change:

Page 12, Paragraph 3.1.1.1 GUARANTEED PERFORMANCE:

Change the maximum allowable landing weight of the fourth item on page as follows:

From: "137,000"

To: "155,000"

Page 19, Paragraph 3.4.1 STRENGTH:

Change the design condition of the fourth item as follows:

From: "Maximum Landing Weight (lb) 137,000"

To: "Maximum Landing Weight (lb) 155,000"

Page A-13, APPENDIX I-C, LANDING GEAR EQUIPMENT:

In the note on bottom of page change "137,000" pounds to "155,000" pounds.

Effect on Weight Empty: Negligible
Effect on Balance: Negligible
Effect on Performance: None

The following shall not appear in the specification language:

The above change is contingent upon prior acceptance of CCP No. 389.

Y 100116 (1) (1) (1) A (Y) AM (Y) O (Y) (A) (1) (1)
SA (Y) (Y) D, A (1) (Y) (1) (1)

SPCL NO. ID- 22-002

DATE. _____

CUSTOMER Hughes Tool Company

MCL 10,500 DTD

PAGE NO. 392

MODEL. 22-1 (Convair "880")

12-14 Convair initiated

| | |
|-------------------|--|
| REASON FOR CHANGE | Adding interchangeability of passenger seat belts. |
|-------------------|--|

EFFECT ON BALANCE :

CUAD. 6T. EMPTY

OPER. WT. EMPTY

Q

○

1 NC-1 LB.

EFFECT ON GUARANTEED PERFORMANCE: *

None

• NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON
PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES

F. H. Shaw

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE

AIRPLANES AFFECTED

SPECIAL PROVISIONS.

EFFECT ON PRICE PER AIRPLANE.

RECLIPPING

NON-REGISTRATION:

12164:

2014 F 2106

CONVAIR, A DIVISION OF LEGAL DYNAMICS CORP.

Title: Specification Administrative Change, Interchangeability of Passenger Seat Belts

Origin: Convair initiated

Reason for Change: Adding interchangeability of passenger seat belts.

Description of Change:

Page A-14, APPENDIX I-C, FURNISHINGS:

Change the below item in the equipment list as follows:

From: **79 Passenger Safety Belts and
Crash Energy Absorbers

To: **79 Passenger Safety Belts Autocrat BN1-1802
or
Cummins-Sander CV-1005
**79 Crash Energy Absorbers

Page A-14 (Cont-1), APPENDIX I-C, FURNISHINGS:

Change the below item in the equipment list as follows:

From: 12 Passenger Seat Belts
(Club Area)

To: 12 Passenger Seat Belts Autocrat BN1-1802
(Club Area) or
Cummins-Sander CV-1005

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

C O N V A I R

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,499 DTD _____

CHANGE NO: 391

MODEL: 22-1 (Convair "880")

TITLE: Specification Administrative Change (Revision to Paragraph 3.10.1.2)

ORIGIN: Convair initiated

REASON FOR CHANGE: To make specification consistent with the actual installation.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| 0 | 0 | 0 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *
None

| | |
|--|---|
| <p>* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL</p> <p>ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:</p> | <p style="text-align: right;"><i>B. V. Lamm</i></p> <p style="text-align: right;"><i>J. H. Sharp</i> ENGINEERING APPROVAL</p> |
|--|---|

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

Title: Specification Administrative Change (Revision to Paragraph 3.10.1.2)

Origin: Convair initiated

Reason for Change: To make specification consistent with the actual installation.

Description of Change:

Page 38, Paragraph 3.10.1.2 AILERON SYSTEM:

Revise the second and third sentences as follows:

From: "The ailerons shall be manually controlled by a separate cable system from each wheel and a separate cable system in each wing connecting to the aileron flight tab. The ailerons shall be interconnected by push pull tubes."

To: "The ailerons shall be manually controlled by a cable system from the left hand control wheel and the spoilers shall be controlled by a cable system from the right hand control wheel. The two systems shall be interconnected by a spring tube located between the control columns."

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

CONVAIR

COMMERCIAL CHANGE PROPOSAL

Model 22-502 DATE
 Type Single Eng. Cabin Wt 30,000 lbs
 Price 130 Model 22-1 (Convair 200)

Model 22 Aircraft, Certification of for DJ100-32
 (100-32)

Not for use as a replacement for the

used as a replacement for the

| EFFECT IN WEIGHT | | EFFECT IN PRICE | |
|------------------|-----------|-----------------|-------|
| TYPE | Wt. (LBS) | PRICE | PRICE |
| | 10 | | 100 |

1. EFFECT ON MAXIMUM PERFORMANCE

None

2. WEIGHT CHANGES WILL BE ACCUMULATED AND
 RECORDED IN A FUTURE CHANGE PROPOSAL

3. EFFECTS OF THE CHANGE IS ILLEGIBLE AND
 THE IMPORTANCE OF THE FOLLOWING CHANGES

Handwritten signature

| CONVAIL OFFICE ACCEPTANCE | EXPLANATION |
|---------------------------|-------------|
| | |
| | |
| | |
| | |

CONVAIL & CONVAIR ENGINEERING CO. INC.

Title: Model 22 Aircraft, Certification of for CJ805-32
 Engine Operation.

Origin: Delta requested and Convair proposed for TWA

Reason for Change: As above

Description of Change:

This proposal has no effect on specification language, and is submitted for cost purposes relative to certifying TWA Model 22 aircraft for operation with CJ805-32 engines. The flight and maintenance manuals will be revised as required to reflect the results of this certification.

Effect on Weight Empty: 0
 Effect on Balance: 0
 Effect on Performance: None

Change: Maximum Landing Weight, Increase of to 137,000 Lbs.

Reason: Data requested and Convair proposed for TIA

Reason for Change: as above

Description of Change:

Item 11, Paragraph 3.1.1.1 GUARANTEED PERFORMANCE:

Change the maximum allowable landing weight of the aircraft as set
on page 10 follows:

From: "132,000"

To: "137,000"

Item 11, Paragraph 3.4.1 WEIGHTS:

Change the design condition of the aircraft as follows:

From: "Maximum Landing Weight (10) 132,000"

To: "Maximum Landing Weight (10) 137,000"

Item 11, APPENDIX 1-C, LANDING GEAR EQUIPMENT:

Do the note on bottom of page, change "132,000 pounds" to
"137,000 pounds".

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,498 DTD _____

CHANGE NO: 388

MODEL: 22-1 (Convair "880")

TITLE: Specification Administrative Change (Revision to P/N of RMI Indicator)

ORIGIN: Convair initiated

REASON FOR CHANGE: To add alternate and interchangeable P/N for RMI Indicator

EFFECT ON WEIGHT *

EFFECT ON BALANCE *

GUAR. WT. EMPTY

OPER. WT. EMPTY

0

0

0

INCH LB.

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

K. V. Lunn
J. H. Sharp

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 388

Title: Specification Administrative Change (Revision to P/N of
RMI Indicator)

Origin: Convair initiated

Reason for Change: To add alternate and interchangeable P/N for
RMI indicator

Description of Change:

Page A-5, APPENDIX I-C, ELECTRONIC EQUIPMENT:

Revise the below item under "VHF NAVIGATION SYSTEM" as follows:

| | | | |
|--------------|------------------|-----------------|---|
| <u>From:</u> | "2 RMI Indicator | Eclipse-Pioneer | 36135-1S-19-A1" |
| <u>To:</u> | "2 RMI Indicator | Eclipse-Pioneer | **36135-1S-19-A1 or **36135-1S-19-B1" |

Add the following to the bottom of Page A-5:

"**Alternate and interchangeable"

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,547 DTD 13 September 1960

CHANGE NO: 385

MODEL: 22-1 (Convair "880")

TITLE: Floor, Hydraulic Compartment, Extension of

ORIGIN: Verbal request by Messers Parmet and Bew of TWA

REASON FOR CHANGE: Customer request

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| 6.0 lb | 6.0 lb | +5,832 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *
None

| | |
|--|---|
| <p>* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL</p> <p>ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:</p> | <p style="text-align: right;"><i>H. V. Lamm</i> <i>R. Peterson</i></p> <p style="text-align: right;">ENGINEERING APPROVAL</p> |
|--|---|

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 385

Title: Floor, Hydraulic Compartment, Extension of

Origin: Verbal request by Messers Parmet and Bew of TWA

Reason for Change: Customer request

Description of Change:

This proposal has no effect on specification language, and consists of the following:

- a. Extension of the existing floor in the hydraulic compartment forward to Station 945; a distance of approximately 19 inches. Addition of one channel, two clips, two straps and one .050 aluminum alloy floor panel, approximately 45 by 19 inches.
- b. Addition of three angles to aft side of frame Station 945 for floor panel attachment; and approximately ten plate nuts and screws.

Effect on Weight Empty: +6.0 pounds
Effect on Balance: +5,832 inch-pounds
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,520 DTD 24 August 1960

CHANGE NO: 384

MODEL: 22-1 (Convair "880")

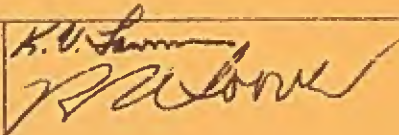

TITLE: Stabilizer Position Warning Cam, Modification of

ORIGIN: Verbal request by GORDON GRANGER of TWA

REASON FOR CHANGE: Customer request

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | O INCH LB. |
| O | O | |

EFFECT ON GUARANTEED PERFORMANCE: *
None

| | |
|---|--|
| * NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL |   |
| ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES: | |
| | ENGINEERING APPROVAL |

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---------------------|------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 384

Title: Stabilizer Position Warning Cam, Modification of

Origin: Verbal request by GORDON GRANGER of TWA

Reason for Change: Customer request

Description of Change:

This proposal has no effect on specification language, and consists of modifying the stabilizer position warning cam and indicator to permit stabilizer position of 1.5 degrees to 7 degrees for takeoff instead of the existing 2 degrees to 6 degrees. The Flight Manual will be revised to reflect the above.

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

CONVAIR

AN AIRCRAFT MANUFACTURING COMPANY
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

PROJ. NO. 30-22-502

DATE _____

CUSTOMER General Tool Company

MCL 10,540 DTD 22 July 1960

CHANGE NO. 303

MODEL 22-1 (Convair 440⁹¹)

DESCRIPTION Maximum Landing Weight, Increase of

REFERENCE TWA Letter 880-1364-EAC, dated 13 July 1960

REASON FOR CHANGE Customer request

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| OPER. WT. EMPTY | OPER. WT. EMPTY | |
| 0 | 0 | 0 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *
None

| | |
|--|--|
| <p>NECESSARY CHANGES WILL BE ACCUMULATED AND REFLECTED IN A FUTURE CHANGE PROPOSAL</p> <p>THE SUCCESS OF THIS CHANGE IS DEPENDENT UPON FIRM ACCEPTANCE OF THE FOLLOWING CHANGES.</p> | <p><i>K. V. L...</i> <i>Th...</i></p> <p>ENGINEER'S APPROVAL</p> |
|--|--|

| | |
|-------------------------------|---------------------|
| ESTIMATED DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
|-------------------------------|---------------------|

| | |
|----------------------|------------------------------|
| RECURRING PROVISIONS | EFFECT ON PRICE PER AIRPLANE |
| | RECURRING _____ |
| | NON-RECURRING _____ |
| | TOTAL _____ |

APPROVED BY _____
DATE _____
CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

From: Maximum Landing Weight, Increase of

Reference: TAA Letter 880-1364-EAC, dated 13 July 1960

Reason For Change: Customer request

Description of Change:

Page 12, Paragraph 3.1.1.1 GUARANTEED PERFORMANCE:

Change the maximum allowable landing weight of the fourth item on page as follows:

From: "132,800"

To: "146,500"

Page 16, Paragraph 3.4.1 STRENGTH:

Change the design condition of the fourth item as follows:

From: "Maximum Landing Weight (lb) 132,800"

To: "Maximum Landing Weight (lb) 155,000"

Page 4-13, APPENDIX I-C, LANDING GEAR EQUIPMENT:

In the note on bottom of page, change "132,800 pounds" to "146,500 pounds".

Effect on Weight Empty: 0

Effect on Balance: 0

Effect on Performance: None

The following shall not appear in the specification language:

It shall be specifically noted that while this proposal stipulates a maximum allowable landing weight of 146,500 pounds for guaranteed performance, the objective shall be to obtain a maximum allowable landing weight of 155,000 pounds.

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,546 DTD 24 August 1960

CHANGE NO: 382

MODEL: 22-1 (Convair "880")

TITLE: Vortex Destroyer, Deletion of

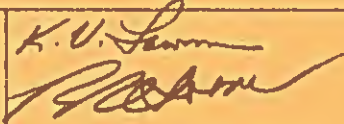
ORIGIN: Verbal request by LARRY CRISSMAN of TWA

REASON FOR CHANGE: Customer request

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| -14.0 lb | -14.0 lb | -10,143 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

| | |
|--|--|
| <p>* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL</p> <p>ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:</p> | <div style="text-align: center;">  <p>ENGINEERING APPROVAL</p> </div> |
|--|--|

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 382

Title: Vortex Destroyer, Deletion of

Origin: Verbal request by LARRY CRISSMAN of TWA

Reason for Change: Customer request

Description of Change:

This proposal has no effect on specification language.

| | |
|-------------------------|---------------------|
| Effect on Weight Empty: | -14.0 pounds |
| Effect on Balance: | -10,143 inch-pounds |
| Effect on Performance: | None |

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,545 DTD 23 August 1960

CHANGE NO. 381

MODEL: 22-1 (Convair "880")

TITLE: Generator Load Limit Switch, Deletion of

ORIGIN: Verbal request by LARRY CRISSMAN of TWA

REASON FOR CHANGE: Customer request

EFFECT ON BALANCE •

GUAR. WT. EMPTY

OPER. WT. EMPTY

-7.0 lb

-7.0 lb

-5,306 INCH LB.

EFFECT ON GUARANTEED PERFORMANCE: *

None

- NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON
PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING:

TOTAL:

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

6-12-11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846

CONVAIR: SD

Hughes Tool Company
Change No. 381

Title: Generator Load Limit Switch, Deletion of

Origin: Verbal request by LARRY CRISSMAN of TWA

Reason for Change: Customer request

Description of Change:

This proposal has no effect on specification language.

Effect on Weight Empty: -7.0 pounds
Effect on Balance: -5,306 inch-pounds
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,531 DTD 22 June 1960

CHANGE NO: 380

MODEL: 22-1 (Convair "880")


TITLE: Electrical Plug for Buffet Liquid Container, Installation of

ORIGIN: TWA verbal request (Spannuth to Parsons) on 16 June 1960

REASON FOR CHANGE: Customer request

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | Negligible INCH LB. |
| Negligible | Negligible | |

EFFECT ON GUARANTEED PERFORMANCE: *
None

| | |
|---|--|
| * NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL | <div style="text-align: center;">  ENGINEERING APPROVAL </div> |
| ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES: | |

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 380

Title: Electrical Plug for Buffet Liquid Container, Installation of

Origin: TWA verbal request (Spannuth to Parsons) on 16 June 1960

Reason for Change: Customer request

Description of Change:

This proposal has no effect on specification language, and consists of removing the three-prong 115 AC plug, and associate equipment from No.1 Buffet unit for the Two-Gallon Liquid Container, and replacing with a two-prong 28-volt AC plug. The new installation will include the following equipment items:

- A. MS 3100R-12S-3S connector on the aircraft structure for No. 1 Buffet power supply.
- B. Bendix CT06E-12S-3P connector on No. 1 Buffet for power supply.
- C. Cannon 16371, two-prong plug.
- D. Circuit breaker, and the necessary wiring.

Effect on Weight Empty: Negligible
Effect on Balance: Negilible
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO. ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,535 Revised
DTD 21 July 1960

CHANGE NO. 379

MODEL: 22-1 (Convair "880")

TITLE: Nose Landing Gear Door Position Indication, Installation of

ORIGIN: Discussion between TWA and Convair Representatives on 21 July 1960

REASON FOR CHANGE: Customer Request

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|-----------------------|-----------------------|-----------------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| Proposal "A": +2.0 lb | Proposal "A": +2.0 lb | Proposal "A": +340 Inch Lb |
| Proposal "B": +3.0 lb | Proposal "B": +3.0 lb | Proposal "B": +534 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

H. D. Lamm

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

B. J. Simmons

ENGINEERING APPROVAL

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
|----------------------------|---------------------|

| | |
|---------------------|------------------------------|
| SPECIAL PROVISIONS. | EFFECT ON PRICE PER AIRPLANE |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED BY _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

DATE _____

DATE _____

CONVAIR: SD

Hughes Tool Company
Change No. 379

Title: Nose Landing Gear Door Position Indication, Installation of
Origin: Discussion between TWA and Convair Representatives on 21 July 1960
Reason for Change: Customer Request
Description of Change:

PROPOSAL "A"

Page 36, Paragraph 3.8.4.6 - DOORS AND FAIRINGS:

Add the following to the end of the paragraph:

"Visual indication shall be provided in the flight compartment for nose landing gear doors "closed" on the ground and in flight."

Effect on Weight Empty: +2.0 pounds
Effect on Balance: +340 inch-pounds
Effect on Performance: None

The following shall not appear in the specification language:

Two switches (similar to 22-06480-1) will be added to landing gear door unsafe light to indicate N. L. G. door position independent of landing gear position.

PROPOSAL "B"

Same as Proposal "A".

Effect on Weight Empty: +3.0 pounds
Effect on Balance: +534 inch-pounds
Effect on Performance: None

The following shall not appear in the specification language:

Two switches (similar to 22-06480-1) will be added to the lower access and service door unsafe light located on the RH auxiliary console panel to indicate N. L. G. door position when N. L. G. is down and locked.

C O N V A I R

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,536 DTD 19 July 1960

CHANGE NO: 378

MODEL: 22-1 (Convair "880")

TITLE: Seven Rows of Coach Seats in Lieu of First Class Seats, Installation of

ORIGIN: TWA TWX (Rourke to Chambers) dated 18 July 1960

REASON FOR CHANGE: Customer request

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| +110.0 lbs. | +110.0 lbs. | +142,378 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *
None

| | |
|--|---|
| <p>* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL</p> <p>ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:</p> | <p style="text-align: center;"><i>H. V. Lawton</i> <i>R. C. Brown</i></p> <p style="text-align: center;">ENGINEERING APPROVAL</p> |
|--|---|

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

BY: _____

DATE: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

CONVAIR, INC. 6-1217A

CONVAIR: SD

Hughes Tool Company
Change No. 378

Page 1 of 4

Title: Seven Rows of Coach Seats in Lieu of First Class Seats, Installation of

Origin: TWA TWX (Rourke to Chambers) dated 18 July 1960

Reason for Change: Customer request

Description of Change:

Page 2B, STANDARD LOUNGE SEATING ARRANGEMENT:

Above illustration will be revised to show movable coat dividers installed in eighth from aft row with seven triple and seven double coach installed aft of the coat dividers. The title will be revised as follows:

STANDARD-MIXED SEATING ARRANGEMENT
56 First Class Passengers
35 Coach Passengers
(Including 12-Place Club Area)

Page 3, Paragraph 1.1 - BASIC TYPE:

Revise the third sentence as follows:

From: "The Standard Arrangement of this airplane provides for the accommodation of 84 first class passengers".

To: "The Standard-Mixed Arrangement of this airplane provides for the accommodation of 56 first class passengers (including 12 club area passengers) and 35 coach passengers".

Revise the following after the fourth sentence:

From: "1. Standard Arrangement (Basic)
2. Mixed Coach
3. Coach"

To: "1. Standard-Mixed Arrangement (Basic)
2. Coach
3. Full First Class"

In the first line of the fifth sentence, change "Standard Arrangement" to "Standard-Mixed Arrangement". In fourth line, change "Appendices II and III" to "Pages A-24A and A-24B"

Page 14, Paragraph 3.1.2.1 - WEIGHT EMPTY:

In the second line, change "Standard Configuration" to "Standard-Mixed Configuration".

Page 14, Paragraph 3.1.2.2 - LOADING SUMMARY:

Revise the following under "Payload"

From: "1. Payload (space limit) *Standard Configuration = 22,490 lb. (84 passengers including 12-place club area)"

To: "1. Payload (space limit) *Standard-Mixed Configuration -23,645 (56 first class passengers, including 12 club area passengers; and 35 coach passengers)"

Page 16, Paragraph 3.2.1 - GENERAL INTERIOR ARRANGEMENT:

Revise the paragraph to read as follows:

"The interior arrangement of the airplane shall be as shown on Page 2B, STANDARD-MIXED SEATING ARRANGEMENT".

Page 106, Paragraph 3.19.1.1.5 - PASSENGER SEATS:

Revise the fifth sentence as follows:

From: "Integral folding food trays shall be installed in the main passenger compartment seat backs, excluding the last row of seats which shall receive provisions only".

To: "Integral folding food trays shall be installed in the main passenger compartment seat backs, excluding the last row of first class seats which shall receive provisions only and the last row of coach seats, which shall not receive provisions".

Revise the last sentence as follows:

From: An adjustable head rest shall be installed on each seat in the main passenger compartment".

To: "An adjustable head rest shall be installed on each first class seat in the main passenger compartment".

Page 107, Paragraph 3.19.1.1.7 - CONVERTIBILITY:

In the sixth and tenth lines, change "Tourist" to "Coach"

Page 110, Paragraph 3.19.2.8.1 - ASH TRAYS:

In the fifth item, change "lounges" to "club area"

Page 113, Paragraph 3.19.3.1 - GENERAL ARRANGEMENT:

Revise the first sentence to read as follows:

"The standard-mixed fuselage interior general arrangement is shown herein on Page 2B".

Page 113, Paragraph 3.19.3.1.1 - PASSENGER COMPARTMENT:

Delete the paragraph and substitute the following:

"The passenger compartment provides seating accommodations for 56 first class passengers (including 12 club area passengers) and 35 coach passengers. The passenger compartment aisle width shall be approximately 24 inches between inboard arm rests in the first class section, and approximately 19 inches in the coach section. The head height shall be 85 inches from the top of the floor, except in the areas of lowered ceiling".

Page 129, Paragraph 3.23.2 - EQUIPMENT INTERCHANGEABILITY:

Revise the below item under "2. Interchangeable Without Alteration" as follows:

From: "*Passenger Seat Assembly L.H. - Passenger Seat Assy. R.H."

To: "*Passenger Seat Assembly, First Class, L.H. - Passenger Seat Assembly, First Class, R.H."

Add the following after the above item:

"Passenger Seat Assembly, Triple, Coach (except last row)
Passenger Seat Assembly, Double, Coach (except last row)"

Revise the bottom note on Page 129 to read as follows:

"**NOTE: Seat back covers are interchangeable between all L.H. and R.H. first class double - seat positions. Seat covers are interchangeable between corresponding positions on L.H. and R.H. first class double seats. Coach seat back covers and seat covers are interchangeable between double coach seats and triple coach seats".

Page A-14, APPENDIX I-C, FURNISHINGS:

Revise the below items under "Description" as follows:

| | | | |
|--------------|---|---------|------------|
| <u>From:</u> | "14 Passenger Seats (Double) L/H (Integral Food Trays) | Convair | 22-92500-1 |
| | 14 Passenger Seat (Double) R/H (Integral Food Trays) | Convair | 22-92500-2 |
| | 72 Passenger Safety Belts, and Crash Energy Absorbers" | | |

| | | | |
|-----|---|---------|------------|
| To: | "8 Passenger Seats, First Class (Double) L/H (Integral Food Trays) | Convair | 22-92500-1 |
| | 8 Passenger Seats, First Class (Double) R/H (Integral Food Trays) | Convair | 22-92500-2 |
| | 79 Passenger Safety Belts and Crash Energy Absorbers" | | |

Add the following items under "Description"

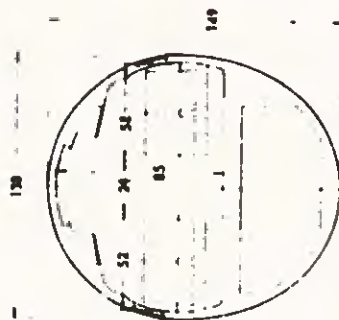
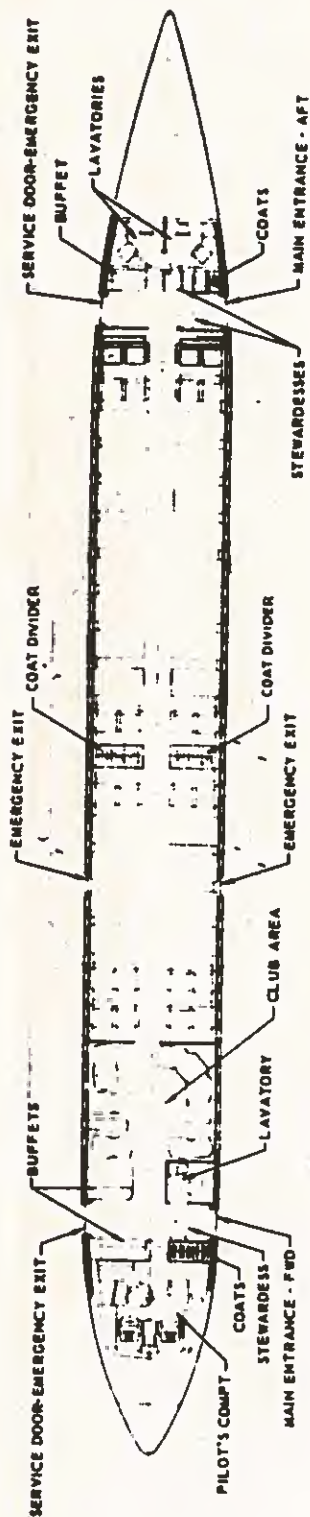
| | | | |
|----|--|------|---------------|
| "5 | Passenger Seat, Coach, Triple (Integral Food Trays) | TECO | TE-801-3-64 |
| 1 | Passenger Seat, Coach Triple (Integral Food Tray and Plug- in-Type Tray Receptacle) | TECO | |
| 1 | Passenger Seat, Coach, Triple, Special (Last Row, Without Integral Food Tray) | TECO | TE-801-A-3-64 |
| 5 | Passenger Seat, Coach, Double (Integral Food Trays) | TECO | TE-801-2-44 |
| 1 | Passenger Seat, Coach, Double (Integral Food Tray and Plug- in-Type Tray Receptacle) | TECO | |
| 1 | Passenger Seat, Coach, Double, Special (Last Row, Without Integral Food Tray) | TECO | TE-801-A-2-44 |

Enclosure: (A) One copy Page A-24B - FULL FIRST CLASS SEATING ARRANGEMENT
WITH CLUB AREA.

Effect on Weight Empty: +110.0 lbs.
Effect on Balance: +142,378 in. lbs.
Effect on Performance: None

The following shall not appear in the specification language:

Arrangements for transfer of seat ownership are mutually satisfactory to Convair and TWA, and will be completed prior to shipment of seats.



TYPICAL SECTION



FULL FIRST CLASS SEATING ARRANGEMENT
WITH CLUB AREA

84 FIRST CLASS PASSENGERS
(INCLUDING 12 PLACE CLUB AREA)

TWA

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,532 DTD 1 July 1960

CHANGE NO: 376

MODEL: 22-1 (Convair "880")

TITLE: Coat Divider Door or Curtain, Installation of

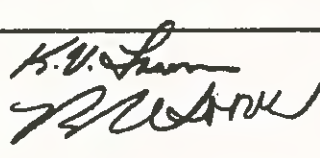
ORIGIN: Verbal request by N. PARMET of TWA, and TWA/Convair Discussions on 1 July 1960

REASON FOR CHANGE: Customer request

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|------------------------|------------------------|--------------------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| Proposal "A", +15.0 lb | Proposal "A", +15.0 lb | Proposal "A", +12,285 Inch Lb |
| Proposal "B", + 7.0 lb | Proposal "B", + 7.0 lb | Proposal "B", + 5,733 INCH LB. |
| Proposal "C", +21.0 lb | Proposal "C", +21.0 lb | Proposal "C", +17,199 Inch Lb |

EFFECT ON GUARANTEED PERFORMANCE: *

None

| | |
|--|--|
| <p>* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL</p> <p>ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:</p> | <div style="text-align: center;">  ENGINEERING APPROVAL </div> |
|--|--|

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 376

Page 1 of 3

Title: Coat Divider Door or Curtain, Installation of

Origin: Verbal request by N. PARMET of TWA, and TWA/Convair Discussions on 1 July 1960

Reason for Change: Customer request

Description of Change:

PROPOSAL "A"

(Folding Fabric-Type Door)

Page 107, Paragraph 3.19.1.1.7 CONVERTIBILITY:

Add the following after the second sentence:

"A folding fabric-type door shall be installed between the aft end of the movable coat dividers. This door shall have approximately 15 inches floor clearance, and shall incorporate a latch for door retention in the open position, and a lock for retaining the door in the closed position, and shall be suspended from an overhead track."

Page A-24A, INTERIOR ARRANGEMENT:

Above illustration will be revised to show accordian-type door between movable coat dividers.

Effect on Weight Empty: +15.0 pounds
Effect on Balance: +12,285 inch-pounds
Effect on Performance: None

CONVAIR: SD

Hughes Tool Company
Change No. 376

Page 2 of 3

PROPOSAL "B"

(Curtain)

Page 114, Paragraph 3.19.3.5 CURTAINS:

Add the following after the second sentence:

"The movable coat dividers shall be equipped with an aisle curtain at the aft end."

Page A-24A, INTERIOR ARRANGEMENT:

Above illustration will be revised to show an aisle curtain at aft end of movable coat dividers.

Effect on Weight Empty: +7.0 pounds
Effect on Balance: +5,733 inch-pounds
Effect on Performance: None

PROPOSAL "C"

(Swinging-Type Door)

Page 107, Paragraph 3.19.1.1.7 CONVERTIBILITY:

Add the following after the second sentence:

"A hinged aisle door, designed to open forward, shall be installed between the aft end of the movable coat dividers. This door shall have approximately 15 inches floor clearance, ten inches ceiling clearance and shall incorporate a latch for door retention in the open position and a lock for retaining the door in the closed position."

Page A-24A, INTERIOR ARRANGEMENT:

Above illustration will be revised to show door between movable coat dividers.

| | |
|-------------------------|---------------------|
| Effect on Weight Empty: | +21.0 pounds |
| Effect on Balance: | +17,199 inch-pounds |
| Effect on Performance: | None |

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,493 DTD _____

CHANGE NO: 374

MODEL: 22-1 (Convair "880")

TITLE: 6061-T6 Aluminum Alloy Tubing in Pitot-Static System, Use of

ORIGIN: Convair initiated

REASON FOR CHANGE: To permit use of 6061-T6 aluminum alloy tubing in pitot-static system.

EFFECT ON WEIGHT *

EFFECT ON BALANCE *

GUAR. WT. EMPTY

OPER. WT. EMPTY

0

0

0 INCH LB.

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

M.C. K. O. L. [Signature]
[Signature]

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE _____

CONVAIR: SD

Hughes Tool Company
Change No. 374

Title: 6061-T6 Aluminum Alloy Tubing in Pitot-Static System, Use of

Origin: Convair initiated

Reason for Change: To permit use of 6061-T6 aluminum alloy tubing in
pitot-static system.

Description of Change:

Page 16, Paragraph 3.2.2 MATERIALS:

Revise the last sentence to read as follows:

"6061-T6 aluminum alloy tubing or 6061-T6 welded fabricated sheet metal parts shall not be used except, that 6061-T6 aluminum alloy tubing may be used in the pitot-static system."

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,492 DTD _____

CHANGE NO: 373

MODEL: 22-1 (Convair "880")

TITLE: Specification Administrative Change (Deletion of Hydraulic Return Line Accumulators)

ORIGIN: Convair initiated

REASON FOR CHANGE: The accumulators, proposed for deletion by this CCP, are not required with the Vickers pump.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|----------------------------|----------------------------|---------------------|
| GUAR. WT. EMPTY -7.0 lb | OPER. WT. EMPTY -7.0 lb | -5,285 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *
None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

R.R. Hoover
by K.V. Lamm

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:
CCP No. 369

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 373

Title: Specification Administrative Change (Deletion of Hydraulic
Return Line Accumulators)

Origin: Convair initiated

Reason for Change: The accumulators, proposed for deletion by this
CCP, are not required with the Vickers pump.

Description of Change:

Page 64a - HYDRAULIC SYSTEM No. 1:

Page 64b - HYDRAULIC SYSTEM No. 2:

The above illustrations will be revised to delete the four
accumulators shown in the pump return lines.

Page A-11, APPENDIX I-C, HYDRAULIC EQUIPMENT:

Delete the below item from the "Description List"

| | | |
|-----------------------------|-------|--------|
| "4 Accumulator, Return Line | Redco | 11332" |
|-----------------------------|-------|--------|

| | |
|-------------------------|--------------------|
| Effect on Weight Empty: | -7.0 pounds |
| Effect on Balance: | -5,285 inch-pounds |
| Effect on Performance: | None |

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC. NO. 7D 22-002

DATE: _____

CUSTOMER Hughes Tool Company

MCL 10,491 DID _____

CHANGE NO. 372

MODEL 22-1 (Convair "880")

TITLE Specification Administrative Change (Terrain Warning Bell Location)

COMMENTS Convair initiated

REASON FOR CHANGE: To specify location of Terrain Warning System Alarm Bell

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | O INCH LB. |
| O | O | |

EFFECT ON GUARANTEED PERFORMANCE: *
None

NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

H. V. Lamm

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

T. J. Lamm

ENGINEERING APPROVAL

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
|----------------------------|---------------------|

| | |
|--------------------|-------------------------------|
| SPECIAL PROVISIONS | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

DATE: _____

BY: _____

7

CONVAIR: SD

Hughes Tool Company
Change No. 372

Title: Specification Administrative Change (Terrain Warning Bell Location)

Origin: Convair initiated

Reason for Change: To specify location of Terrain Warning System alarm bell.

Description of Change:

Page 103, Paragraph 3.17.4.2 TERRAIN WARNING TRANSCEIVER:

Revise the second sentence as follows:

From: "A terrain warning single-stroke bell, which will sound whenever the airplane is operating below a predetermined safe altitude, shall be installed on the overhead in the flight compartment forward of the pilot's console."

To: "A terrain warning single-stroke bell, which will sound whenever the airplane is operating below a predetermined safe altitude, shall be installed inside the pilots' console."

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,526 DTD 7 June 1960

CHANGE NO: 369

MODEL: 22-1 (Convair "880")

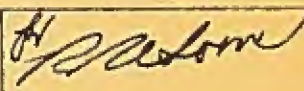
TITLE: Main System Hydraulic Pumps, Change to

ORIGIN: Delta requested and Convair proposed to TWA

REASON FOR CHANGE: As above

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| +38.0 lb | +38.0 lb | +28,376 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *
None

| | |
|---|--|
| * NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL |  |
| ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES: | |
| | ENGINEERING APPROVAL |

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 369

Title: Main System Hydraulic Pumps, Change to

Origin: Delta requested and Convair proposed to TWA

Reason for Change: As above

Description of Change:

Page A-11, APPENDIX I-C, HYDRAULIC EQUIPMENT:

Revise the below item under "Description" as follows:

From: "4 Main System Pumps
(variable displacement type) Ham. Standard 532760"

To: "4 Main System Pumps
(variable displacement-type) Vickers (P/N to be
supplied)

Effect on Weight Empty: +38.0 pounds
Effect on Balance: +28,376 inch-pounds
Effect on Performance: None

The following shall not appear in the Specification language:

The hydraulic pump will incorporate one electrical depressurization valve and one blocking valve. The bolt-on ports will be modified to suit the Model 22 installation; and the yoke blocked back to a 6 gpm rating in lieu of 10 gpm.

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,522 DTD 3 June 1960

CHANGE NO: 368

MODEL: 22-1 (Convair "880")

TITLE: Hydraulic System, Replacement of 1/4 and 3/8-Inch Return Tubing

ORIGIN: Delta requested and Convair proposed to TWA

REASON FOR CHANGE: As above

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|-----------------------|-----------------------|-------------------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| Proposal "A" +5.0 lb | Proposal "A" + 5.0 lb | Proposal "A" +4,240 Inch-Lb |
| Proposal "B" +19.0 lb | Proposal "B" +19.0 lb | Proposal "B" +17,918 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND
TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON
PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 368

Page 1 of 2

Title: Hydraulic System, Replacement of 1/4 and 3/8-Inch Return Tubing

Origin: Delta requested and Convair proposed to TWA

Reason for Change: As above

Description of Change:

PROPOSAL "A"

(Change Material in 1/4 and 3/8-Inch Return Lines of Hydraulic System, in Nacelles and Pylons, and 1/4-Inch Return Lines in Wheel Wall Area, from 5250 Aluminum Alloy to Stainless Steel)

Page 62 Rev., Paragraph 3.15.1.4 LINES:

Revise the second sentence as follows:

From: "Return lines shall be 5250 aluminum alloy conforming to MIL-WW-T-787 except that stainless steel lines shall be used in the nacelle area and also in other areas where dictated by high return pressures."

To: "Return lines shall be 5250 aluminum alloy conforming to MIL-WW-T-787, except that 1/4 and 3/8-inch tubing in nacelle and pylon areas and all 1/4-inch lines in wheel wells shall be stainless steel conforming to MIL-T-6845; and also in other areas where dictated by high return pressures."

Effect on Weight Empty: +5.0 pounds
Effect on Balance: +4,240 inch-pounds
Effect on Performance: None

PROPOSAL "B"

(Changes Material in All 1/4 and 3/8-Inch Return Lines of Hydraulic System from 52SO Aluminum Alloy to Stainless Steel)

Page 62 Rev., Paragraph 3.15.1.4 LINES:

Revise the second sentence as follows:

From: "Return lines shall be 52SO aluminum alloy conforming to MIL-WW-T-787 except that stainless steel lines shall be used in the nacelle area and also in other areas where dictated by high return pressures."

To: "Return lines shall be 52SO aluminum alloy conforming to MIL-WW-T-787 except that all 1/4 and 3/8-inch return lines in the hydraulic system shall be stainless steel conforming to MIL-T-6845."

Effect on Weight Empty: +19.0 pounds
Effect on Balance: +17,918 inch-pounds
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,521 DTD _____

CHANGE NO.: 367

MODEL: 22-1 (Convair "880")

TITLE: Second Auxiliary Hydraulic Pump Installation; and Separation of Hydraulic Systems

ORIGIN: Delta requested and Convair proposed to TWA

REASON FOR CHANGE: As above

EFFECT ON WEIGHT *

EFFECT ON BALANCE *

GUAR. WT. EMPTY

OPER. WT. EMPTY

+49.0 lb

+49.0 lb

+42,846 INCH LB.

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

[Signature]
ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

Title: Second Auxiliary Hydraulic Pump Installation; and Separation of Hydraulic Systems

Origin: Delta requested and Convair proposed to TWA

Reason for Change: As above

Description of Change:

Page 62 Rev., Paragraph 3.15.1.1 DESCRIPTION AND COMPONENTS:

Revise the fourth sentence as follows:

From: "An electrically driven standby pump shall be provided which will supply hydraulic power to systems No. 1 and No. 2."

To: "Two electrically-driven standby pumps shall be provided which will operate independent of each other. One standby pump will supply hydraulic power to system No. 1 and the other to system No. 2."

Page 63, Paragraph 3.15.1.7 RESERVOIRS:

Delete the paragraph and substitute the following:

"Two hydraulic reservoirs, each independent of the other, shall be installed aft of the main wheel well area to supply the systems. Each reservoir shall have separate filling and level indication facilities. The installation of the reservoirs shall be such that the tanks may be filled at ground working level. A dual, remote reading quantity gage shall be installed on the flight engineer's panel to indicate the fluid level of each reservoir system. Each hydraulic system reservoir shall be provided with a transmitter, and a two-channel amplifier installed in the electrical compartment to actuate the dual-quantity gage. One sight glass shall be installed in each reservoir which shall be accessible for daily preflight and routine maintenance checks."

Page 63, Paragraph 3.15.1.9 PUMPS:

Revise the second sentence as follows:

From: "One electrically-driven pump shall be provided."

To: "Two electrically-driven pumps shall be provided."

CONVAIR: SD

Hughes Tool Company
Change No. 367

Page 2 of 2

Page 64a, HYDRAULIC SYSTEM NO. 1

Page 64b, HYDRAULIC SYSTEM NO. 2

Above illustrations will be revised to separate reservoirs and to show second standby pump.

Page 83, Paragraph 3.16.17 ESSENTIAL POWER:

Revise the first item under "Flight Controls" as follows:

From: "1. Hydraulic Pump Motor"

To: "1. Hydraulic Pump Motor (2)"

Page A-11, APPENDIX I-C, HYDRAULIC EQUIPMENT:

Revise the below item under "Description" as follows:

From: "1 Auxiliary Electric-Driven Pump NYAB 165W01008-3"

To: "2 Auxiliary Electric-Driven Pump N.Y. Air Brake 165W01008-3"

Page A-12, APPENDIX I-C, HYDRAULIC EQUIPMENT:

Add the following item to the "Description List":

| | | |
|--|-----------|--------|
| "2 Reservoir Remote Fill Line Filters | Purolator | 62289" |
|--|-----------|--------|

| | |
|-------------------------|---------------------|
| Effect on Weight Empty: | +49.0 pounds |
| Effect on Balance: | +42,846 inch-pounds |
| Effect on Performance: | None |

C O N V A I R

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,489 DTD _____

CHANGE NO: 366

MODEL: 22-1 (Convair "880")

TITLE: Specification Administrative Change (Revision to Equipment Design Altitude)

ORIGIN: Convair initiated

REASON FOR CHANGE: To specify adequacy of oxygen and cabin pressurization systems up to 41,000 feet altitude.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|----------------------|----------------------|---------------------|
| GUAR. WT. EMPTY 0 | OPER. WT. EMPTY 0 | 0 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *
None

| | |
|---|---|
| <p>* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL</p> <p>ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES: CCP No. 361.</p> | <p><i>[Signature]</i></p> <p>ENGINEERING APPROVAL</p> |
|---|---|

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---------------------|--|
| SPECIAL PROVISIONS: | <p>EFFECT ON PRICE PER AIRPLANE:</p> <p>RECURRING: _____</p> <p>NON-RECURRING: _____</p> <p>TOTAL: _____</p> |
|---------------------|--|

ACCEPTED: _____ CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 366

Title: Specification Administrative Change (Revision to Equipment Design Altitude)

Origin: Convair initiated

Reason for Change: To specify adequacy of oxygen and cabin pressurization systems up to 41,000 feet altitude.

Description of Change:

Page 18, Paragraph 3.2.7 EQUIPMENT DESIGN ALTITUDE:

Delete the paragraph and substitute the following:

"Systems and equipment shall be mechanically satisfactory for operations up to 45,000 feet altitude. The cabin pressurization and pressurized oxygen systems shall be designed for operation up to 41,000 feet altitude."

Page 126B, ESTIMATED CABIN PRESSURE SCHEDULE:

Above illustration will be revised to call out "MAXIMUM DIFFERENTIAL = 8.3 PSI \pm .1 PSI" in lieu of "8.2 PSI".

Effect on Weight Empty: O
Effect on Balance: O
Effect on Performance: None

24/550
110

CONVAIR

COMMERCIAL CHANGE PROPOSAL

SPEC. NO. 7D-22-002

DATE: _____

CUSTOMER Hughes Tool Company

MCL 10,517 DTD 17 May 1960

CHANGE NO. 365

MODEL 22-1 (Convair "380")

TITLE Club Area Table Installation, Change to

ORIGIN TWA/Convair Discussions on 13 May 1960

REASON FOR CHANGE: Customer request

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| +3.0 lb | +3.0 lb | +1,404 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: * None

| | |
|--|---|
| <p>* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL</p> <p>ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:</p> | <p><i>[Signature]</i></p> <p><i>[Signature]</i></p> <p>ENGINEERING APPROVAL</p> |
|--|---|

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 365

Title: Club Area Table Installation, Change to

Origin: TWA/Convair Discussions on 13 May 1960

Reason for Change: Customer request

Description of Change:

This proposal has no effect on specification language, and consists of the installation of two small cocktail tables in the club area in lieu of the present left hand table. Club area carpeting will be altered as required.

| | |
|-------------------------|--------------------|
| Effect on Weight Empty: | +3.0 pounds |
| Effect on Balance: | +1,404 inch-pounds |
| Effect on Performance: | None |

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002 DATE: _____

CUSTOMER: Hughes Tool Company MCL 10,487 DTD _____

CHANGE NO: 364 MODEL: 22-1 (Convair "880")

TITLE **Specification Administrative Change (Clarification of Air Conditioning Items)**

ORIGIN: **Convair initiated**

REASON FOR CHANGE: **To clarify the intent of the specification**

EFFECT ON WEIGHT *

EFFECT ON BALANCE *

GUAR. WT. EMPTY

OPER. WT. EMPTY

0

0

0

INCH LB.

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR 8-501, 6-1211A

CONVAIR: SD

Hughes Tool Company
Change No. 364

Title: Specification Administrative Change (Clarification of
Air Conditioning Items)

Origin: Convair initiated

Reason for Change: To clarify the intent of the specification

Description of Change:

Page A-17, APPENDIX I-C, PRESSURIZATION, ANTI-ICING AND AIR CONDITIONING
EQUIPMENT:

Revise the below items in the Description List as follows:

| | | | | |
|--------------|----|--|---------------|-----------|
| <u>From:</u> | "2 | Recirculation Blower (Cabin Air) | Ham. Standard | 545751 |
| | 2 | Cabin Pressure Regulator and Safety Valve | AIResearch | 103182" |
| <u>To:</u> | "1 | Recirculation Blower (cabin air) | Ham. Standard | 545751 |
| | 1 | Controller, Cabin Pressure | AIResearch | 102290-3 |
| | 2 | Valves, Outflow | AIResearch | 103182-4" |

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,518 DTD _____

CHANGE NO: 363

MODEL: 22-1 (Convair "880")

TITLE: Cargo Compartment Tie-Down Rings, and Electronic Compartment Floor Panels, Installation of

ORIGIN: Proposals "A" and "B" TWA requested. Proposal "C" Delta requested and Convair proposed to TWA.

REASON FOR CHANGE: As above.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|-----------------------|-----------------------|-------------------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| Proposal "A" +24.0 lb | Proposal "A" +24.0 lb | Proposal "A" +19,260 Inch LB |
| Proposal "B" +11.0 lb | Proposal "B" +11.0 lb | Proposal "B" + 3,905 INCH LB. |
| Proposal "C" +12.0 lb | Proposal "C" +12.0 lb | Proposal "C" + 5,868 Inch Lb |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

K. W. [Signature]
R. [Signature]

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 363

Page 1 of 3

Title: Cargo Compartment Tie-Down Rings, and Electronic Compartment Floor Panels, Installation of

Origin: Proposals "A" and "B" TWA requested. Proposal "C" Delta requested and Convair proposed to TWA.

Reason for Change: As above.

Description of Change:

PROPOSAL "A"

(Cargo Tie-Down Rings in Both Cargo Compartments)

Page 110, Paragraph 3.19.2.5 LUGGAGE AND CARGO COMPARTMENTS:

Add the following after the second sentence ending in the fifth line:

"The flooring in both the forward and aft cargo compartments shall be reinforced as required and shall be provided with 12 each flush-type tie-down rings for securing heavy or uncrated cargo."

Effect on Weight Empty: +24.0 pounds
Effect on Balance: +19,260 inch-pounds
Effect on Performance: None

CONVAIR: SD

Hughes Tool Company
Change No. 363

Page 2 of 3

PROPOSAL "B"

(Electronic Compartment Floor Panels)

This proposal has no effect on the specification language and consists of the following:

Installation of three removable, protective floor panels in the electronic compartment; one over the external access door, and one each forward and aft of this access door. These panels will be fabricated of fiber glass or aluminum alloy material.

| | |
|-------------------------|--------------------|
| Effect on Weight Empty: | +11.0 pounds |
| Effect on Balance: | +3,905 inch-pounds |
| Effect on Performance: | None |

CONVAIR: SD

Hughes Tool Company
Change No. 363

Page 3 of 3

PROPOSAL "C"

(Cargo Tie-Down Rings in Forward Compartment Only)

Page 110, Paragraph 3.19.2.5 LUGGAGE AND CARGO COMPARTMENTS:

Add the following after the second sentence ending in the fifth line:

"The flooring in the forward cargo compartment shall be reinforced as required and shall be provided with 12 flush-type tie-down rings for securing heavy or uncrated cargo."

Effect on Weight Empty: +12.0 pounds
Effect on Balance: +5,868 inch-pounds
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,486 DTD _____

CHANGE NO.: 362

MODEL: 22-1 (Convair "880")

TITLE: Specification Administrative Change (Revised C. G. Limits Graph)

ORIGIN: Convair initiated

REASON FOR CHANGE: To ensure adequate steering for takeoff.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|----------------------|----------------------|---------------------|
| GUAR. WT. EMPTY 0 | OPER. WT. EMPTY 0 | 0 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *
None

| | |
|--|---|
| <p>* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL</p> <p>ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:</p> | <p><i>K.V. Lamm</i></p> <p><i>[Signature]</i></p> <p>ENGINEERING APPROVAL</p> |
|--|---|

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
|----------------------------|---------------------|

| | |
|---------------------|--|
| SPECIAL PROVISIONS: | <p>EFFECT ON PRICE PER AIRPLANE:</p> <p>RECURRING: _____</p> <p>NON-RECURRING: _____</p> <p>TOTAL: _____</p> |
|---------------------|--|

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 362

Title: Specification Administrative Change (Revised C. G. Limits Graph)

Origin: Convair initiated

Reason for Change: To ensure adequate steering for takeoff.

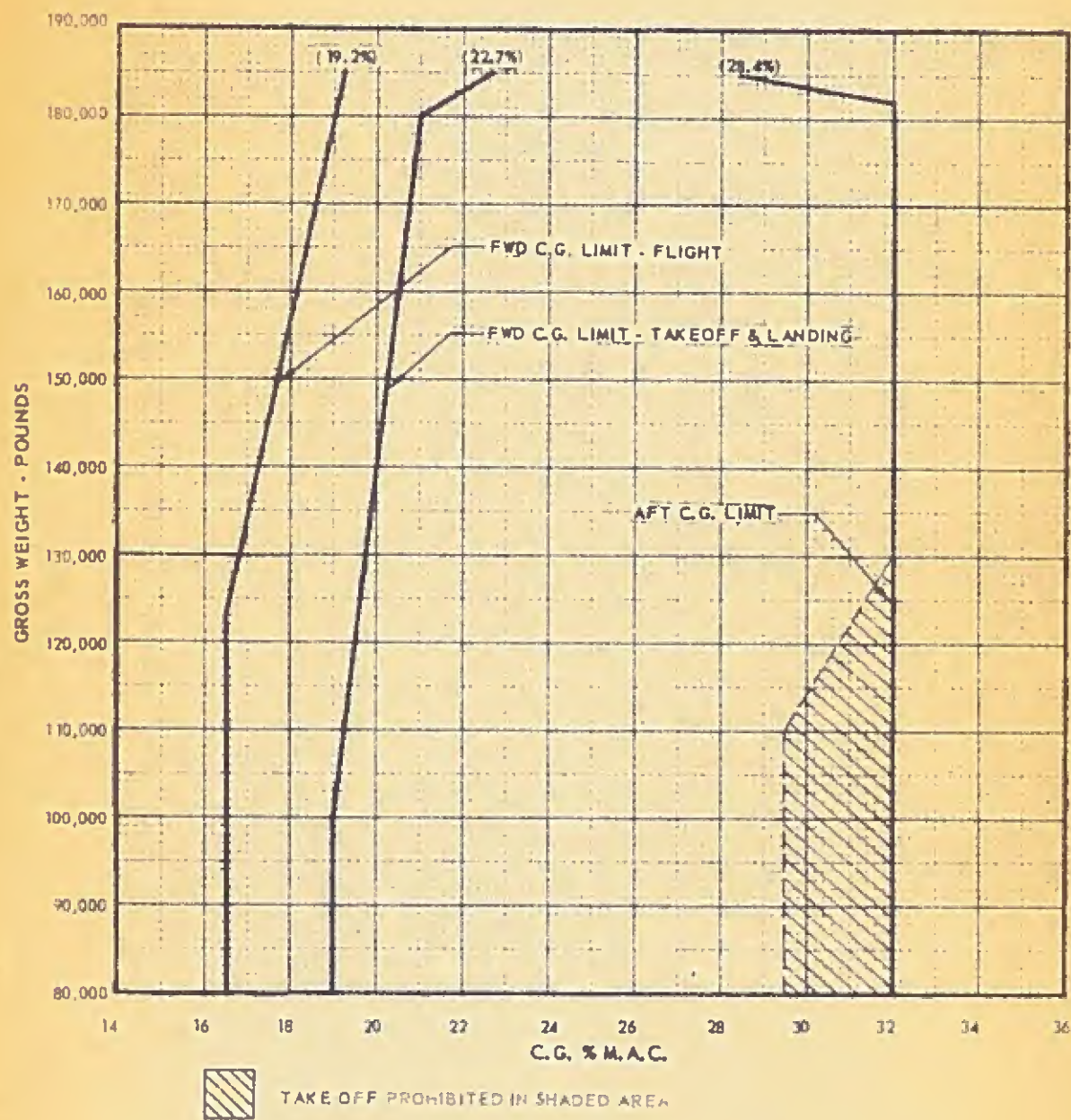
Description of Change:

Page 6B, C. G. DESIGN LIMITS:

Replace above graph in specification with Enclosure (A):

Enclosure: (A) One copy Page 6B - C. G. DESIGN LIMITS (Revised)

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None



CENTER OF GRAVITY LIMITS

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,506 DTD 18 February 1960

CHANGE NO: 361

MODEL: 22-1 (Convair "880")

TITLE: FAA Certification to 41,000 Feet Altitude

ORIGIN: TWA verbal request (Bew/Ober) January 1960

REASON FOR CHANGE: Customer request

EFFECT ON WEIGHT *

EFFECT ON BALANCE *

| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
|-----------------|-----------------|------------|
| 0 | 0 | 0 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *
As noted

| | |
|--|---|
| <p>* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL</p> <p>ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:</p> | <p><i>H. V. Lamm</i></p> <p><i>R. L. Lamm</i></p> <p>ENGINEERING APPROVAL</p> |
|--|---|

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____ CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 361

Title: FAA Certification to 41,000 Feet Altitude

Origin: TWA verbal request (Bew/Ober) January 1960

Reason for Change: Customer request

Description of Change:

Page 18, Paragraph 3.2.6 OPERATING ALTITUDE:

In the second line, change "40,000" to "41,000".

In the third line, change "8.2 psi" to "8.3 psi ±.1 psi".

Page 125, Paragraph 3.20.3.1 DESIGN DIFFERENTIAL PRESSURE:

In the third line, change "8.2 psi" to "8.3 psi ±.1 psi".

Page A-8, APPENDIX I-C, INSTRUMENTS AND RELATED EQUIPMENT:

Revise the below item as follows:

From: "1 Cabin Differential Press. Ind. Kollsman 254BK-10-0104"

To: "1 Cabin Differential Press. Ind. Kollsman P/N to be
supplied)

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: As noted

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,485 DTD _____

CHANGE NO: 360A

MODEL: 22-1 (Convair "880")

TITLE: **Specification Administrative Change (Revision to No. 2 Hydraulic System Schematic)**

ORIGIN: **Convair initiated**

REASON FOR CHANGE: **To more accurately define the internal flow lines of MLG Sequence Valves on subject illustration, and revision to CCP No. 360.**

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|----------------------|----------------------|---------------------|
| GUAR. WT. EMPTY 0 | OPER. WT. EMPTY 0 | 0 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: **None**

| | |
|--|--|
| <p>* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL</p> <p>ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:</p> | <p><i>K. V. Lunn</i></p> <p><i>J. H. Sharp</i></p> <p>ENGINEERING APPROVAL</p> |
|--|--|

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
|----------------------------|---------------------|

| | |
|---------------------|--|
| SPECIAL PROVISIONS: | <p>EFFECT ON PRICE PER AIRPLANE:</p> <p>RECURRING: _____</p> <p>NON-RECURRING: _____</p> <p>TOTAL: _____</p> |
|---------------------|--|

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 360A

Title: Specification Administrative Change (Revision to No.2 Hydraulic System Schematic)

Origin: Convair initiated.

Reason for Change: To more accurately define the internal flow lines of MLG Sequence Valves on subject illustration and revision to CCP No. 360.

Description of Change:

Page 64b, HYDRAULIC SYSTEM NO. 2:

Replace above illustration in specification with Enclosure (A):

Enclosure: (A) One copy Page 64b, HYDRAULIC SYSTEM NO. 2 (Revised)

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

C O N V A I R

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,507 DTD 23 February 1960

CHANGE NO: 359

MODEL: 22-1 (Convair "880")

TITLE: Stabilizer Trim Rate Control, Change of

ORIGIN: TWA/Convair Meetings of 17-18 February 1960

REASON FOR CHANGE: Customer request

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| +2.0 lb | +2.0 lb | +516 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

H. V. Sam
PA [signature]

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 359

Title: Stabilizer Trim Rate Control, Change of

Origin: TWA/Convair Meetings of 17-18 February 1960

Reason for Change: Customer request

Description of Change:

Page 40, Paragraph 3.10.1.5.1 STABILIZER TRIM CONTROL:

Add the following after the first sentence:

"The stabilizer trim rate control shall operate as a function of flap position; with maximum stabilizer rate when flaps are in "down" position and minimum stabilizer rate when flaps are in "up" position."

| | |
|-------------------------|------------------|
| Effect on Weight Empty: | +2.0 pounds |
| Effect on Balance: | +516 inch-pounds |
| Effect on Performance: | None |

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-003

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,484 DTD _____

CHANGE NO: 358

MODEL: 22-1. (Convair "880")

TITLE: Specification Administrative Change (Revision to Paragraph 3.17.1.7.1)

ORIGIN: Convair initiated.

REASON FOR CHANGE: To clarify the intent of the specification.

EFFECT ON WEIGHT *

EFFECT ON BALANCE *

GUAR. WT. EMPTY

OPER. WT. EMPTY

0

0

0 INCH LB.

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

[Handwritten Signature]
[Handwritten Signature]

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 358

Title: Specification Administrative Change (Revision to Paragraph 3.17.1.7.1)

Origin: Convair initiated

Reason for Change: To clarify the intent of the specification.

Description of Change:

Page 96, Paragraph 3.17.1.7.1 DC POWER CONTROL:

In the first sentence, delete "terrain warning".

In the fourth sentence change "No. 2 VHF communication" to "No. 1 VHF communication".

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

C O N V A I R

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,511 DTD 6 April 1960

CHANGE NO: 357

MODEL: 22-1 (Convair "880")

TITLE: Flap Setting, Takeoff, Change of


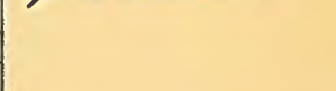
ORIGIN: TWA/Convair Meetings on 5 April 1960

REASON FOR CHANGE: Customer request

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| 0 | 0 | 0 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

As will be noted in Flight Manual

| | |
|---|--|
| * NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL |   |
| ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES: | |
| | ENGINEERING APPROVAL |

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 357

Title: Flap Setting, Takeoff, Change of

Origin: TWA/Convair Meetings on 5 April 1960

Reason for Change: Customer request

Description of Change:

This proposal has no effect on specification language, and consists of modifying the airplane certification program to include takeoff flap setting at 30 degrees.

The Flight Manual will be revised as required to show the effect of this proposal.

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: As will be noted in Flight Manual

C O N V A I R

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,483 DTD _____

CHANGE NO: 356

MODEL: 22-1 (Convair "880")

TITLE: Specification Administrative Change (Delete Fwd Lounge Removal as Replacement Item)

ORIGIN: Convair initiated

REASON FOR CHANGE: To clarify the intent of the specification.

EFFECT ON WEIGHT *

EFFECT ON BALANCE *

GUAR. WT. EMPTY

OPER. WT. EMPTY

0

0

0 INCH LB.

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

H. V. L...

[Signature]

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 356

Title: Specification Administrative Change (Delete Fwd Lounge Removal
as Replacement Item)

Origin: Convair initiated

Reason for Change: To clarify the intent of the specification.

Description of Change:

Page A23, APPENDIX I-D, COMPONENT REMOVAL AND REPLACEMENT TIME:

Delete the below item under "Replacement Item":

| | | | |
|---------------------|---|-----|------|
| "Fwd Lounge Removal | 4 | 4.0 | 1.0" |
|---------------------|---|-----|------|

| | |
|-------------------------|------|
| Effect on Weight Empty: | 0 |
| Effect on Balance: | 0 |
| Effect on Performance: | None |

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,503 DTD 19 January 1960

CHANGE NO: 355

MODEL: 22-1 (Convair "880")

TITLE: Snubber, Cargo Door, Installation of

ORIGIN: Meetings with Mr. Spannuth of TWA 13 through 15 January 1960

REASON FOR CHANGE: Customer request

EFFECT ON WEIGHT *

EFFECT ON BALANCE *

| | | |
|-----------------|-----------------|----------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| +22.0 lbs | +22.0 lbs | +17,656 |
| | | INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

K.V. Simon

B.J. Simon

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 355

Title: Snubber, Cargo Door, Installation of

Origin: Meetings with Mr. Spannuth of TWA 13 through 15 January 1960

Reason for Change: Customer request.

Description of Change:

Page 30, Paragraph 3.7.1.5.4 - BODY GROUP:

Add the following to the end of the paragraph:

"Each cargo door shall be provided with a snubber device designed for snubbing during the closing operation only, with free door travel when opening".

| | |
|-------------------------|------------------|
| Effect on Weight Empty: | +22.0 lbs |
| Effect on Balance: | +17,656 inch/lbs |
| Effect on Performance: | None |

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,481 DTD _____

CHANGE NO: 353

MODEL: 22-1 (Convair "880")

TITLE: Specification Administrative Change (Addition of Observer's Seat to Interchangeability List).

ORIGIN: Convair initiated.

REASON FOR CHANGE: To clarify the intent of the specification.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| 0 | 0 | 0 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

B.V. Lamm

[Signature]

ENGINEERING APPROVAL

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
|----------------------------|---------------------|

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

BY: _____

DATE: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

CONVAIR: SD

Hughes Tool Company
Change No. 353

Title: Specification Administrative Change (Addition of Observer's
Seat to Interchangeability List)

Origin: Convair initiated.

Reason for Change: To clarify the intent of the specification.

Description of Change:

Page 129, Paragraph 3.23.2 EQUIPMENT INTERCHANGEABILITY:

Add the following item under "2. Interchangeability Without
Alterations":

"Observer's Seat Assembly"

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,479 DTD _____

CHANGE NO: 352

MODEL: 22-1 (Convair "880")

TITLE: **Specification Administrative Change (Revision to P/N of Static System Selector Valve)**

ORIGIN: **Convair initiated**

REASON FOR CHANGE: **Product improvement**

EFFECT ON WEIGHT *

EFFECT ON BALANCE *

GUAR. WT. EMPTY

OPER. WT. EMPTY

0

0

0

INCH LB.

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

K.W. Lane

[Signature]

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 352

Title: Specification Administrative Change (Revision to P/N of
Static System Selector Valve)

Origin: Convair initiated

Reason for Change: Product improvement

Description of Change:

Page A-10, APPENDIX I-C, INSTRUMENTS AND RELATED EQUIPMENT:

Revise the below item under "KOLLSMAN INTEGRATED INSTRUMENT SYSTEM
as follows:

From: "2 Static Selector Valve"

To: "2 Valve, Static System Selector Republic 1-2560-10"

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,478 DTD _____

CHANGE NO: 351

MODEL: 22-1 (Convair "880")

TITLE: Specification Administrative Change (Clarification of Fuel Strainer Installation)

ORIGIN: Convair initiated.

REASON FOR CHANGE: To clarify the intent of the specification.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| 0 | 0 | 0 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *
None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

B. J. Simons

ENGINEERING APPROVAL

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

BY: _____

DATE: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

CONVAIR: SD

Hughes Tool Company
Change No. 351

Title: Specification Administrative Change (Clarification of Fuel Strainer Installation)

Origin: Convair initiated.

Reason for Change: To clarify the intent of the specification.

Description of Change:

Page 51, Paragraph 3.12.9.8 STRAINERS AND FILTERS:

Revise the paragraph title and paragraph to read as follows:

"STRAINERS: An 8-10 mesh screen shall be installed at inlet of each jettison, boost and transfer pump."

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,477 DTD _____

CHANGE NO: 350

MODEL: 22-1 (Convair "880")

TITLE: Specification Administrative Change (Delete Color Coding and Directional Arrows from Engine Fluid System Hoses and Tubing)

ORIGIN: Convair initiated.

REASON FOR CHANGE: General Electric states that these features are unnecessary.

EFFECT ON WEIGHT *

EFFECT ON BALANCE *

GUAR. WT. EMPTY

OPER. WT. EMPTY

0

0

0

INCH LB.

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

Daniel Offenberg 10/13

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 350

Title: Specification Administrative Change (Delete Color Coding and Directional Arrows from Engine Fluid System Hoses and Tubing)

Origin: Convair initiated.

Reason for Change: General Electric states that these features are unnecessary.

Description of Change:

Page 16, Paragraph 3.2.2.1 COLOR CODING:

Change the period at the end of the first sentence to a comma, and add the following:

", except for fluid system hoses and tubing installed on engine by engine manufacturer."

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,471 DTD _____

CHANGE NO: 342

MODEL: 22-1 (Convair "880")

TITLE: Specification Administrative Change (Revision to Pressure Ratio Transmitter)

ORIGIN: Convair initiated based on Kollsman improvement in design.

REASON FOR CHANGE: To extend the life of unit under extraordinary vibration conditions.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | 0 INCH LB. |
| 0 | 0 | |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

B. J. Simons

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 342

Page 1 of 2

Title: Specification Administrative Change (Revision to Pressure Ratio Transmitter)

Origin: Convair initiated based on Kollsman improvement in design.

Reason for Change: To extend the life of unit under extraordinary vibration conditions.

Description of Change:

Page A-8, APPENDIX I-C, INSTRUMENTS AND RELATED EQUIPMENT:

Revise the below item in the Description List as follows:

| | | | |
|--------------|-------------------------------------|----------|----------------|
| <u>From:</u> | "4 Engine Press. Ratio Transmitter | Kollsman | A27790-00-001" |
| <u>To:</u> | "*4 Engine Press. Ratio Transmitter | Kollsman | A29411-00-023 |
| | **4 Engine Press. Ratio Transmitter | Kollsman | A29411-80-134" |

Add the following note to the bottom of Page A-8:

"NOTE: *Applicable to airplanes 1 through 14
**Applicable to airplanes 15 through 30."

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

The following shall not appear in the specification language:

The changes to the pressure ratio transmitter consist of the following:

- a. Morganite bearings (graphite carbon) will be used on the rotor shaft, the intermediate staff, the swinging frame and the aneroid push rod.
- b. The pivots on the handstaff and intermediate staff are lengthened for use with the new bearings.
- c. Damping device being added to the Synchrotel rotor to reduce rotor oscillation.
- d. Silicone damping fluid added to the transfer rods to prevent separation of the rods under vibration.
- e. The mounting of the case mechanism has been improved.
- f. Morganite bearings will be used in the Synchrotel.

TWA Letter No. 880-1188-RLA, dated 18 December 1959 notes that Kollsman in ruggedizing their ratio transmitter is changing the part number from 29411-00-023 to A29411-80-134 and that neither of these part numbers agree with the Kollsman part number now carried in the Specification Appendix I-C list.

Convair has reviewed the part number discrepancy with Kollsman and wishes to confirm that the transmitter type A29411 is a part of assembly A27790. This provides for interchangeability of transmitters between the "880" and "707" as requested by TWA.

Convair installs the transmitter in a Robinson (clamp-type) mount while the A27790 assembly uses a flat plate mount, which is not compatible with the CJ-805 engine installation. The fact that the mounts for the "880" and "707" would not be interchangeable was agreed to by TWA at the time CCP No. 155 was submitted but it was not realized until very recently that part number A27790 included the mount. This proposal is submitted to show the correct part numbers.

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,450 DTD 19 January 1960

CHANGE NO: 341

MODEL: 22-1 (Convair "880")

TITLE: Movable Coat Compartment, Relocation of

ORIGIN: TWA Letter No. 880-1060, dated 1 September 1959

REASON FOR CHANGE: Customer request

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| +9.0 lbs | +9.0 lbs | +14,167 INCH L.B. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:


ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE: _____

AIRPLANES AFFECTED: _____

SPECIAL PROVISIONS: _____

EFFECT ON PRICE PER AIRPLANE:

RECURRING _____

NON-RECURRING _____

TOTAL: _____

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY _____

DATE: _____

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,469 DTD _____

CHANGE NO: 338

MODEL: 22-1 (Convair "880")

TITLE: Specification Administrative Change (Change Emergency Air Brake Cylinder from 400 to 300 Cubic Inches)

ORIGIN: Convair initiated

REASON FOR CHANGE: Replacement of the fiber glass air flask (2,200 psi) with the ICC steel flask (3,000 psi) made it necessary to reduce the cylinder volume from 400 to 300 cubic inches.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * | |
|--------------------|-----------------|---------------------|----------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | | |
| 0 | 0 | 0 | INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

B. J. Simon

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 338

Page 1 of 2

Title: Specification Administrative Change (Change Emergency
Brake Cylinder from 400 to 300 Cubic Inches)

Origin: Convair initiated.

Reason for Change: Replacement of the fiber glass air flask (2,200
psi) with the ICC steel flask (3,000 psi) made it
necessary to reduce the cylinder volume from 400 to
300 cubic inches.

Description of Change:

Page A-8, APPENDIX I-C, INSTRUMENTS AND RELATED EQUIPMENT:

Revise the below item in the Description List as follows:

From: "1 Air Bottle, 3000 PSI, 400-Cubic
Inch Capacity (with Pressure Gage)"

To: "1 Bottle and Drain Fitting, Walter 891545"
Pneumatic, 3,000 PSI, 300-Cubic Inch Kidde

Enclosure: (A) One copy of Convair Graph - MAIN WHEEL EMERG BRAKE
STORAGE PRESSURE VS APPLICATIONS (For information only)

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

CONVAIR: SD

Hughes Tool Company

Change No. 338

Page 2 of 2

The following shall not appear in the specification language:

The markings on the gage of the 300-cubic inch bottle denote the following:

| | |
|--------------------------------------|--------------------|
| Green Arc (Operating Range) | 1,600 to 3,000 lbs |
| Red Line (Maximum Charge) | 3,040 lbs |
| Yellow Radial Line (One Application) | *1,200 lbs |

*NOTE: Airplane not to take off under this condition.

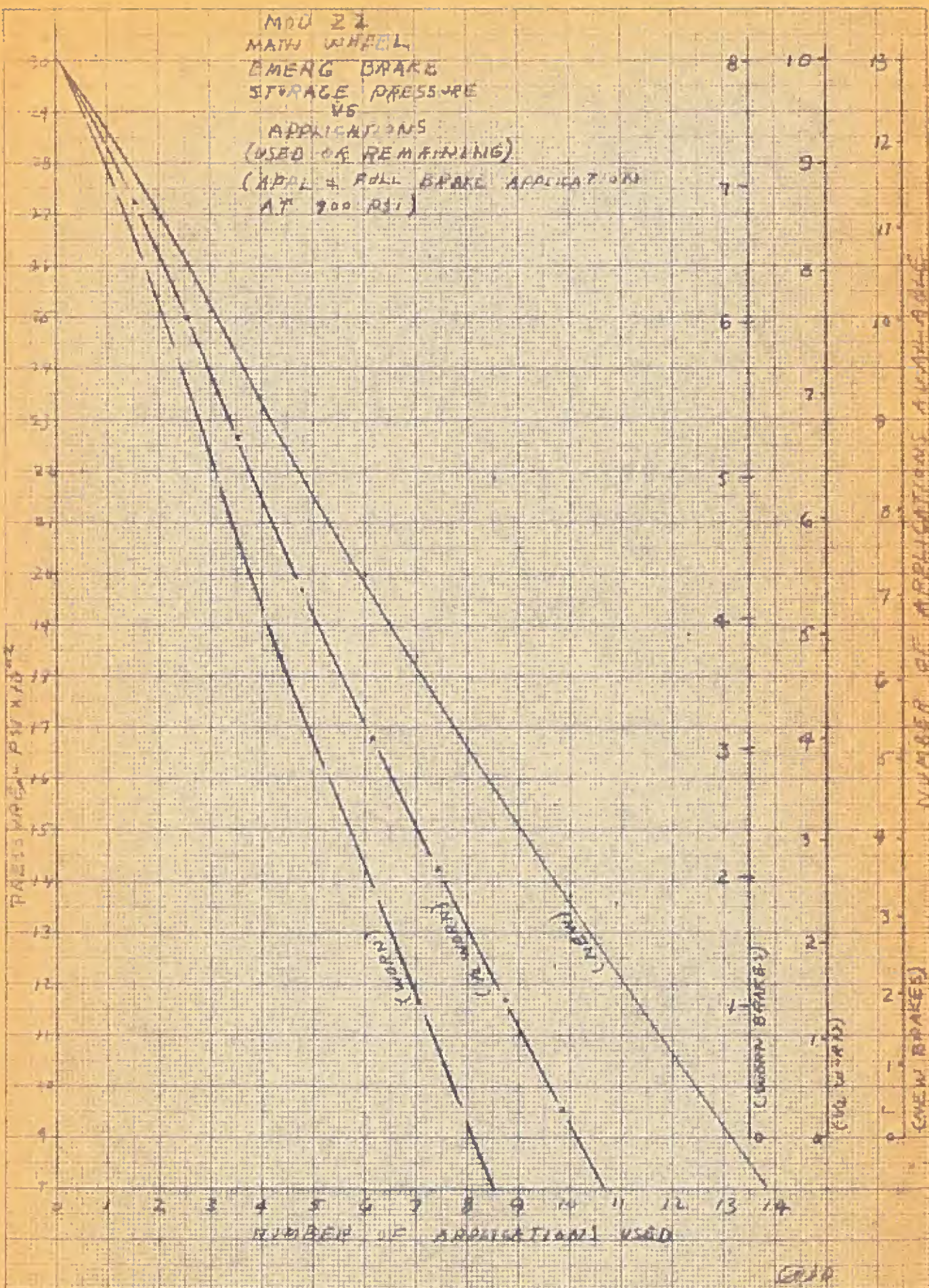
MOD 22
MAIN WHEEL
EMERG BRAKE
STORAGE PRESSURE
VS

APPLICATIONS
(USED OR REMAINING)
(APPL & ROLL BRAKE APPLICATIONS
AT 900 PSI)

STORAGE PRESSURE (PSI) X 10²

NUMBER OF APPLICATIONS AVAILABLE

(NEW BRAKES)



END
11/9/57

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,442 DTD 11 December 1959

CHANGE NO: 337

MODEL: 22-1 (Convair "880")

TITLE: Right Hand Club Area Table, Modification of

ORIGIN: TWA requested.

REASON FOR CHANGE: As above.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| +2.0 lb | +2.0 lb | +882 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

R. J. Simon

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 337

Title: Right Hand Club Area Table, Modification of

Origin: TWA requested.

Reason for Change: As above.

Description of Change:

This proposal has no effect on specification language and consists of adding molded or equivalent padding to the edges of the club area card table. This padding will be of firm density "ensolite" having visible surfaces coated with wear resistant vinyl.

Above materials will be specified in the Customer Interior Finish Specification.

This change will eliminate the present requirement for stowage of table during take-off and landing.

| | |
|-------------------------|------------------|
| Effect on Weight Empty: | +2.0 pounds |
| Effect on Balance: | +882 inch-pounds |
| Effect on Performance: | None |

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,443 DTD 11 December 1959

CHANGE NO: 336

MODEL: 22-1 (Convair "880")

TITLE: Cushioned Head Rest for Aft Facing Stewardess, Installation of

ORIGIN: TWA requested.

REASON FOR CHANGE: As above.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| +3.0 lb | +3.0 lb | +2,378 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

B. J. Simmons

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 336

Title: Cushioned Head Rest for Aft Facing Stewardess, Installation of

Origin: TWA requested.

Reason for Change: As above.

Description of Change:

Page 105, Paragraph 3.19.1.1.3 CABIN ATTENDANTS' SEATS:

Add the following to the end of the paragraph:

"An upholstered, detachable head rest shall be installed, one each on the aft face of the forward left hand coat compartment and on the left hand aft bulkhead for use of the aft facing cabin attendants."

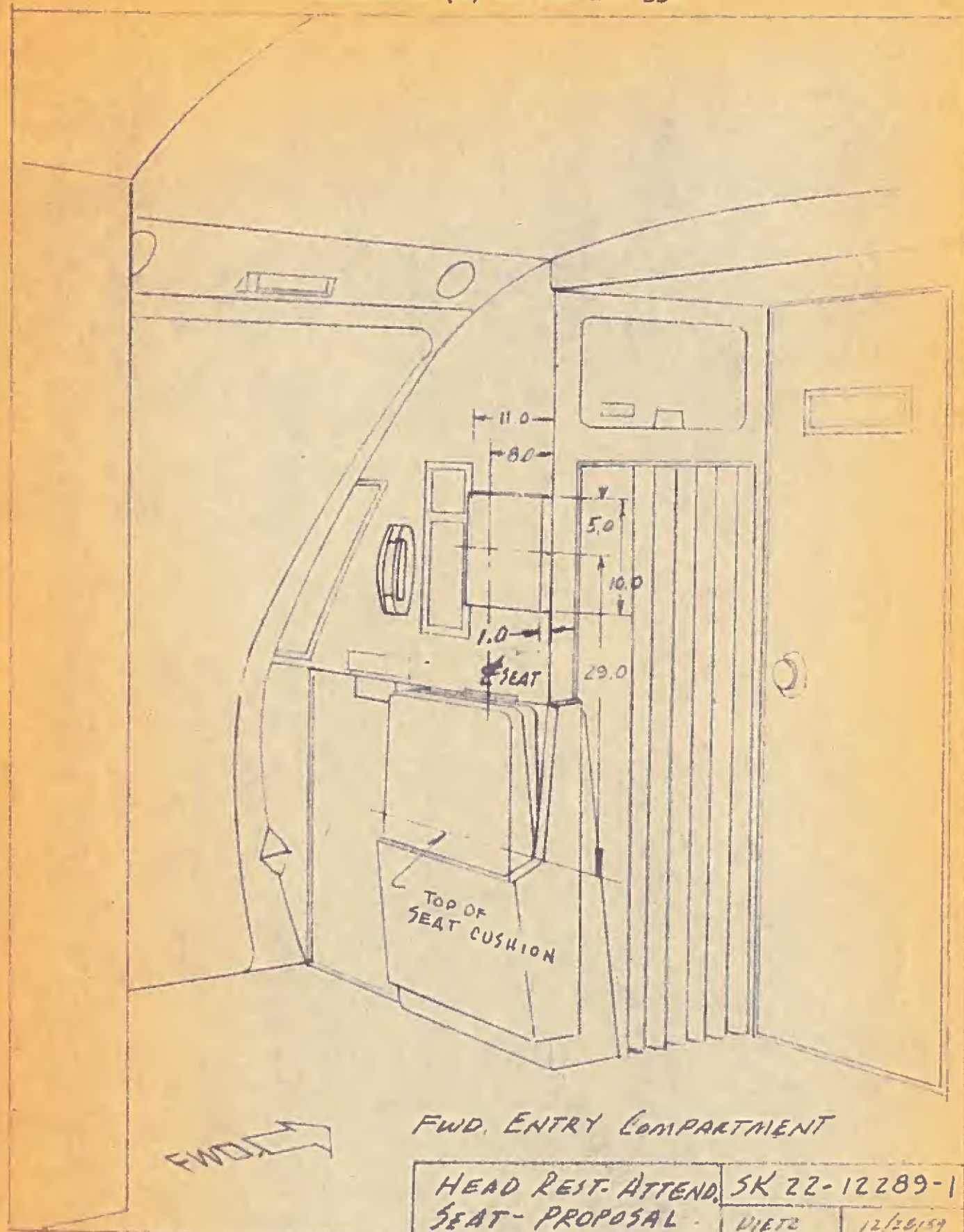
ENCLOSURES: (A) Convair Sketch - HEAD REST, ATTENDANT SEAT, FWD.
ENTRY COMPARTMENT (For information only.)

(B) Convair Sketch - HEAD REST, ATTENDANT SEAT, AFT
ENTRY COMPARTMENT (For information only.)

Effect on Weight Empty: +3.0 pounds
Effect on Balance: +2,378 inch-pounds
Effect on Performance: None

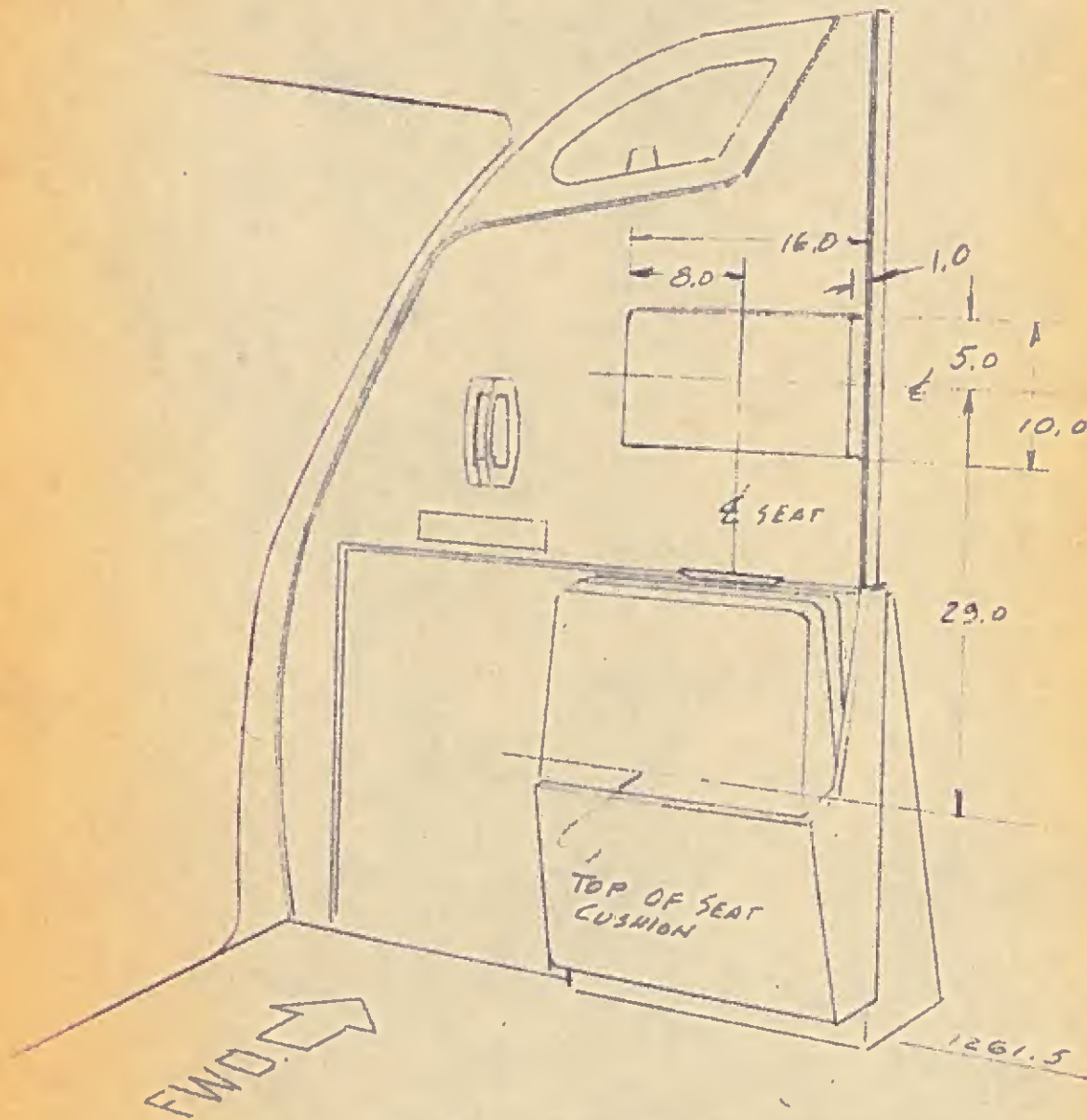
The following shall not appear in the specification language:

The head rests will be fabricated of upholstered "ensolite" (medium density) and attached with snap fasteners or equivalent. The aft head rest will measure approximately 1" x 10" x 16", the forward head rest will measure approximately 1" x 10" x 11" (width of this head rest is limited by proximity of handset to centerline of seat).



FWD. ENTRY COMPARTMENT

| | |
|--------------------|----------------|
| HEAD REST. ATTEND. | SK 22-12289-1 |
| SEAT- PROPOSAL | VIETZ 12/26/59 |



AFT ENTRY COMPARTMENT

| | |
|---------------------|----------------|
| HEAD REST - ATTEND. | SK 22-12289-2 |
| SEAT - PROPOSAL | DIETZ 12/20/97 |

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,467 DTD _____

CHANGE NO: 335

MODEL: 22-1 (Convair "880")


| | |
|-------|--|
| TITLE | Specification Administrative Change (Clarification of Service Interphone Location) |
|-------|--|

| | |
|---------|--------------------|
| ORIGIN: | Convair initiated. |
|---------|--------------------|

| | |
|--------------------|--|
| REASON FOR CHANGE: | To specify service interphone station in the drinking water tank area in lieu of the air conditioning compartment. |
|--------------------|--|

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|---|---|--|
| GUAR. WT. EMPTY <div style="text-align: center;">0</div> | OPER. WT. EMPTY <div style="text-align: center;">0</div> | <div style="text-align: right;">0 INCH LB.</div> |

| | |
|--|--|
| EFFECT ON GUARANTEED PERFORMANCE: * <div style="text-align: center;">None</div> | |
|--|--|

| | |
|---|--|
| * NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES: | <div style="text-align: center; padding: 20px;">  ENGINEERING APPROVAL </div> |
|---|--|

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
|----------------------------|---------------------|

| | |
|---------------------|---|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: RECURRING: _____ NON-RECURRING: _____ TOTAL: _____ |
|---------------------|---|

ACCEPTED: _____

BY: _____

DATE: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

CONVAIR: SD

Hughes Tool Company
Change No. 335

Title: Specification Administrative Change (Clarification of
Service Interphone Location)

Origin: Convair initiated.

Reason for Change: To specify service interphone station in the drink-
ing water tank area in lieu of the air conditioning
compartment.

Description of Change:

Page 98, Paragraph 3.17.2.3.5 SERVICE INTERPHONE:

Revise the below item under service interphone locations as
follows:

From: "12. Air Conditioning Compartment"

To: "12. Drinking Water Tank Area"

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,465 DTD _____

CHANGE NO: 334

MODEL: 22-1 (Convair "600")

TITLE: Specification Administrative Change (Revised C.G. Limits Graph)

ORIGIN: Convair initiated.

REASON FOR CHANGE: To incorporate an up to date Center of Gravity Limits Graph into specification.

EFFECT ON WEIGHT *

EFFECT ON BALANCE *

GUAR. WT. EMPTY

OPER. WT. EMPTY

0

0

0

INCH LB.

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

B. J. Simmons

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 334

Title: Specification Administrative Change (Revised C.G. Limits Graph)

Origin: Convair initiated..

Reason for Change: To incorporate an up to date Center of Gravity Limits Graph into specification.

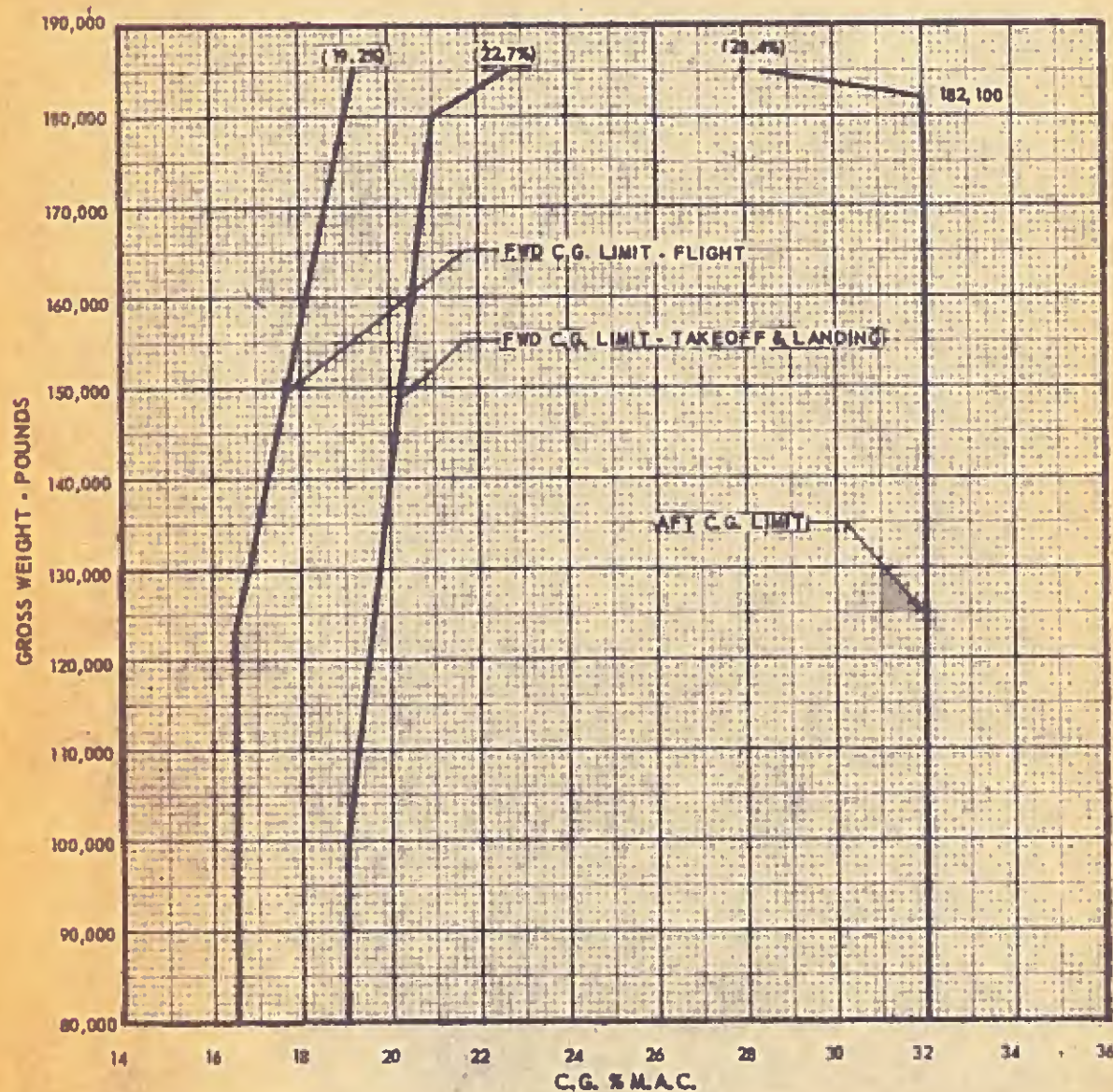
Description of Change:

Page 6B, CENTER OF GRAVITY LIMITS

Replace above graph in specification with Enclosure: (A):

Enclosure: (A) One copy Page 6B, CENTER OF GRAVITY LIMITS
(Revised)

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None



CENTER OF GRAVITY LIMITS

FIGURE 3.1-2

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,476 DTD _____

CHANGE NO: 349B

MODEL: 22-1 (Convair "880")

TITLE: Specification Administrative Change (Revision to Shockmount and Temperature Selector Language)

ORIGIN: Convair initiated

REASON FOR CHANGE: To clarify the intent of the specification, and revision to CCP No. 349A per TWA Letter 880-1368A-332, dated 22 July 1960

EFFECT ON WEIGHT *

EFFECT ON BALANCE *

GUAR. WT. EMPTY

OPER. WT. EMPTY

0

0

0 INCH LB.

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

B. W. Simon

B. W. Simon

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED: .

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 349B

Title: Specification Administrative Change (Revision to Shockmount and Temperature Selector Language)

Origin: Convair initiated

Reason for Change: To clarify the intent of the specification, and revision to CCP No. 349A per TWA Letter 880-1368A-332, dated 22 July 1960

Description of Change:

Page 93, Paragraph 3.17.1.5 RADIO AND ELECTRONIC EQUIPMENT COMPARTMENT:

Revise the ninth sentence to read as follows:

"Nondeteriorating type shockmounts shall be used throughout and shall be readily removable from structure."

Page 123, Paragraph 3.20.1.10.1 TEMPERATURE SELECTOR:

Revise the third sentence as follows:

From: "The temperature selector shall be graduated in ten increments."

To: "Two temperature selectors shall be installed, one for the flight compartment and one for the passenger compartment. The selectors shall operate in a clockwise direction to increase temperature, and shall be divided into ten equal spaces from the nine o'clock position to the three o'clock position."

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

C O N V A I R

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,572 DTD 11 April 1961

CHANGE NO: 348

MODEL: 22-1 (Convair "880")

TITLE: Certification with Anti-Skid System Inoperative

ORIGIN: TWA Letter (no number) dated 3 April 1961

REASON FOR CHANGE: Customer request

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| 0 | 0 | 0 INCH L.B. |

EFFECT ON GUARANTEED PERFORMANCE: * The effect on performance will be shown in Flight Manual after airplane is certified.

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

A.V. Linn

J.H. Chap

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 348

Title: Certification with Anti-Skid System Inoperative

Origin: TWA Letter (no number) dated 3 April 1961

Reason for Change: Customer request

Description of Change:

Page 18 (Cont), Add the following new paragraph to the page, after Paragraph 3.2.8.1:

"3.2.8.2 ANTI-SKID DEVICES: The airplane shall be certified for use with anti-skid devices inoperative. Such certified landing and takeoff distances may not equal guaranteed values."

Effect on Weight Empty: 0

Effect on Balance: 0

Effect on Performance: As noted on cover sheet.

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,449 DTD 14 January 1960

CHANGE NO: 347

MODEL: 22-1 (Convair "880")

TITLE: Buffet Circuitry, Modification of

ORIGIN: TWA/Convair Meeting of 14 January 1960

REASON FOR CHANGE: Customer request.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| +5.0 lb | +5.0 lb | +2,718 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

K. V. L...

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

[Signature]

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

Title: Buffet Circuitry, Modification of

Origin: TWA/Convair Meeting of 14 January 1960

Reason for Change: Customer request.

Description of Change:

This proposal has no effect on the specification language and consists of replacing the limiters in the circuit of each of the three buffets with single phase circuit breakers and three-phase circuit breakers to protect the oven circuits.

The buffet circuits will be modified as follows:

- a. No. 1 and No. 2 Buffets - Remove the nine existing current limiters from each unit and replace with three single phase and two three-phase circuit breakers to be located at outboard splash pan of each buffet.
- b. No. 3 Buffet - Modified same as No. 1 and No. 2 Buffets, except six current limiters are replaced by three single phase and one three-phase circuit breakers.

Effect on Weight Empty: +5.0 pounds
Effect on Balance: +2,718 inch-pounds
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO. ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,502 DTD 19 January 1960

CHANGE NO: 346

MODEL: 22-1 (Convair "880")

TITLE: Control System, Electrical, Modification of

ORIGIN: TWA/Convair Meetings on 13 through 15 January 1960

REASON FOR CHANGE: Customer request

EFFECT ON WEIGHT *

GUAR. WT. EMPTY

OPER. WT. EMPTY

Negligible

Negligible

EFFECT ON BALANCE *

Negligible

INCH LB.

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND
TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON
PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

H.V. Linn
2/29/60

Revised

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 346

Title: Control System, Electrical, Modification of

Origin: TWA/Convair Meetings on 13 through 15 January 1960

Reason for Change: Customer request

Description of Change:

Page A-4, APPENDIX I-C, ELECTRICAL EQUIPMENT:

Revise the below item in the Description List as follows:

From: "4 Control Panel-Regulators (ac) Gen. Electric 3S2781F125A1"

To: "4 Control Panel-Regulators (a-c Gen. Electric (P/N to be supplied)"

Effect on Weight Empty: Negligible
Effect on Balance: Negligible
Effect on Performance: None

The following shall not appear in the specification language:

This proposal consists of providing feeder fault protection with a reset feature incorporated in the generator control panel. The modification of the panel will be accomplished by General Electric. The modified panel will have identical mounting provisions and electrical connections as present panel.

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,448 DTD 7 June 1960 ^{Revised}

CHANGE NO. 345

MODEL: 22-1 (Convair "880")

TITLE: Hydraulic System, Modification of

ORIGIN: TWA/Convair Meeting of 13 January 1960, and TWA/Convair Discussions at Kansas City on 4 April 1960

REASON FOR CHANGE: Customer request

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|-----------------------------|-----------------------------|---------------------|
| GUAR. WT. EMPTY +15.0 lb | OPER. WT. EMPTY +15.0 lb | +10,778 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *
None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

[Signature]

ENGINEERING APPROVAL

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 345

Title: Hydraulic System, Modification of

Origin: TWA/Convair Meeting of 13 January 1960, and TWA/Convair
Discussions at Kansas City on 4 April 1960

Reason for Change: Customer request

Description of Change:

This proposal has no effect on specification language, and consists of the installation of one each solenoid operated by-pass valve between engine driven hydraulic pump pressure line and engine driven hydraulic pump inlet line. The four valves will be controlled by the existing low flow position switches to permit individual pump low-flow operation.

The Appendix I-C section of specification will be revised to include new and modified parts when data are available.

Effect on Weight Empty: +15.0 pounds
Effect on Balance: +10,778 inch-pounds
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,475 DTD _____

CHANGE NO: 344

MODEL: 22-1 (Convair "880")

TITLE: Specification Administrative Change (Delete switch guard)

ORIGIN: Convair initiated.

REASON FOR CHANGE: To clarify the intent of the specification.

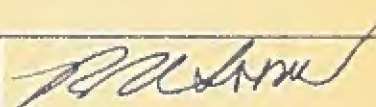
| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| 0 | 0 | 0 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:



ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 344

Title: Specification Administrative Change (Delete switch guard)

Origin: Convair initiated.

Reason for Change: To clarify the intent of the specification.

Description of Change:

Page 78, Paragraph 3.16.8.6 CONTROLS:

Delete the fifth sentence "(Both switches shall be protected by a guard.)"

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10.437 DTD 20 October 1959


CHANGE NO: 343

MODEL: 22-1 (Convair "880")

TITLE: Map Light and Goggles at Observer's Station, Installation of

ORIGIN: TWA TWX 10-3, dated 6 October 1959 and TWA TWX 10-49, dated 29 October 1959

REASON FOR CHANGE: Customer request

| | | |
|---|-----------------|---|
| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| +2.0 lbs | +2.0 lbs | +561 INCH L.B. |
| EFFECT ON GUARANTEED PERFORMANCE: * | | |
| None | | |
| * NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL | |  ENGINEERING APPROVAL |
| ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES: | | |
| LATEST DATE OF ACCEPTANCE: | | AIRPLANES AFFECTED: |
| SPECIAL PROVISIONS: | | EFFECT ON PRICE PER AIRPLANE: |
| | | RECURRING: _____ |
| | | NON-RECURRING: _____ |
| | | TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

Title: Map Light and Goggles at Observer's Station, Installation of

Origin: TWA TWX 10-3, dated 6 October 1959 and TWA TWX 10-49, dated 29 October 1959

Reason for change: Customer request

Description of Change:

Page 74 (Cont) Add the following new paragraph to the page:

"3.16.8.2.5 - OBSERVER'S MAP LIGHT: A map light, similar to the flight engineer's utility light, with controlled red and white features shall be installed at the observer's station".

Page 111 Add the following new paragraph to the page:

"3.19.2.8.11 - SMOKE GOGGLES: Smoke goggles, with stowing provisions, shall be installed at the observer's station".

Page A-3, APPENDIX I-C, ELECTRICAL EQUIPMENT:

Add the following item under "INTERIOR LIGHTS":

| | | |
|-------------------------|--------|----------|
| "1 Observer's Map Light | Grimes | D-6810A" |
|-------------------------|--------|----------|

Page A-14 Cont., FURNISHINGS:

Add the following item to the "Description List":

| | | |
|------------------------------|------------------|-------|
| "1 Goggles, Smoke (Observer) | American Optical | 700A" |
|------------------------------|------------------|-------|

| | |
|-------------------------|---------------|
| Effect on Weight Empty: | +2.0 lbs |
| Effect on Balance: | +561 inch/lbs |
| Effect on Performance: | None |

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO. ZD- 22-002

DATE: _____

CUSTOMER Hughes Tool Company

MCL 10,436 DTD _____

CHANGE NO: 332

MODEL: 22-1 (Convair "880")

TITLE: Window Valance Lighting, Addition of Translucent Covers for

ORIGIN: Convair initiated.

REASON FOR CHANGE: To make valance lighting more attractive.


| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| 3 IAR. WT. EMPTY | OPER. WT. EMPTY | |
| +12.0 lb | +12.0 lb | +9,996 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:


 ENGINEERING APPROVAL

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
|----------------------------|---------------------|

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____ CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO. ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,463 DTD _____

CHANGE NO: 331

MODEL: 22-1 (Convair "880")

TITLE: Specification Administrative Change (Revision to seat back movement pressure)


ORIGIN: Convair initiated.

REASON FOR CHANGE: To provide seat breakover in accordance with CAM 4b. 362-6(c).

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GJAR, WT. EMPTY | OPER. WT. EMPTY | 0 INCH LB. |
| 0 | 0 | |

EFFECT ON GUARANTEED PERFORMANCE: *

None

| | |
|--|---|
| <p>* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL</p> <p>ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:</p> | <div style="text-align: center;">  ENGINEERING APPROVAL </div> |
|--|---|

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
|----------------------------|---------------------|

| | |
|---------------------|---|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: RECURRING: _____ NON-RECURRING: _____ TOTAL: _____ |
|---------------------|---|

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 331

Title: Specification Administrative Change (Revision to seat back movement pressure)

Origin: Convair initiated.

Reason for Change: To provide seat breakover in accordance with CAM 4b. 362-6(c).

Description of Change:

Page 106, Paragraph 3.19.1.1.5.1 SEAT BACK MOVEMENT:

Revise the paragraph to read as follows:

"Each reclining seat shall be designed so that pressure applied on the aft side of the seat-back will override the recline control lock without additional manual operation, and fold the seat-back forward to its normal upright position. This pressure on the seat-back shall not exceed 25 pounds. The seat-back shall fold further forward to approximately 30 degrees forward of the normal upright position (as defined below) without removal of the arm rests, by applying a load of not less than 30 pounds pressure or more than 35 pounds pressure on the aft side of the seat-back. Seat-back positions shall be as follows:

Normal Upright: 15 degrees aft of vertical

Recline: 38 degrees aft of vertical

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-20-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,462 DTD _____

CHANGE NO: 330

MODEL: 22-1 (Convair "880")

TITLE: Specification Administrative Change (Revision to hydraulic system No. 2, and clarification of landing gear retraction)

ORIGIN: Convair initiated.

REASON FOR CHANGE: To clarify the intent of the specification.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| 0 | 0 | 0 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

B. Simon

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

Title: Specification Administrative Change (Revision to hydraulic system No. 2, and clarification of landing gear retraction)

Origin: Convair initiated.

Reason for Change: To clarify the intent of the specification.

Description of Change:

Page 34, Paragraph 3.8.2.5 RETRACTING, EXTENDING AND LOCKING SYSTEMS:

Delete the paragraph and substitute the following:

"Landing gear retraction shall be accomplished hydraulically to a point where the gear is within the wheel well cavity and the landing gear doors are closed in a maximum of ten seconds with four engines operating. Under three-engine operation conditions, the gear retraction cycle shall not exceed 12 seconds."

Enclosure: (A) One copy of Page 64b - HYDRAULIC SYSTEM No. 2 (Revised)

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

The following shall not appear in the specification language:

Enclosure (A) will be incorporated into Specification on Customer approval of this proposal.

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,461 DTD _____

CHANGE NO: 329

MODEL: 22-1 (Convair "880")

TITLE: Specification Administrative Change (Revision to passenger seat cover interchangeability and seat height from floor)

ORIGIN: Convair initiated, based on discussion between Convair representatives and R. Ellinger of TWA on 24 October 1959.


REASON FOR CHANGE: To clarify the intent of the specification.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| 0 | 0 | 0 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *
None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:


 ENGINEERING APPROVAL

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
|----------------------------|---------------------|

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

Title: Specification Administrative Change (Revision to passenger seat cover interchangeability and seat height from floor)

Origin: Convair initiated, based on discussion between Convair representatives and R. Ellinger of TWA on 24 October 1959.

Reason for Change: To clarify the intent of the specification.

Description of Change:

Page 129, Paragraph 3.23.2 EQUIPMENT INTERCHANGEABILITY:

Revised the below item under "2 Interchangeable Without Alterations" as follows:

From: "Passenger Seat Covers, Cushions and Arm Rests"

To: "**Passenger Seat Covers, Cushions and Arm Rests"

Add the following to the bottom of Page 129"

"**NOTE: Seat back covers are interchangeable between all L.H. and R.H. double-seat positions. Seat covers are interchangeable between corresponding positions on L.H. and R.H. double seats."

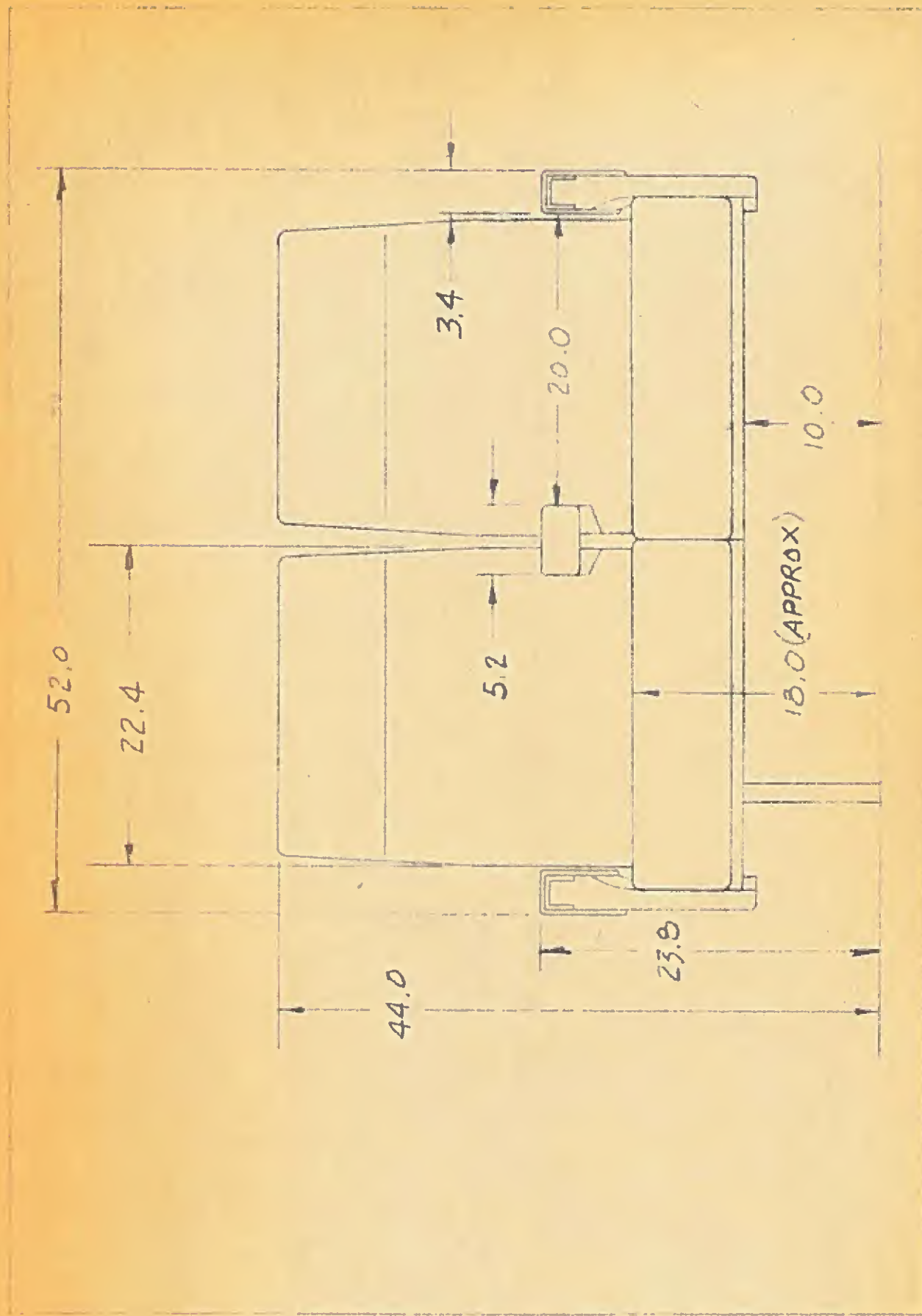
Enclosure: (A) One copy Convair Sketch - 52" SEAT (For information only)

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

The following shall not appear in the specification language:

The language effect of CCP No. 299 (Revision to Interchangeability of Crew and Passenger Seat Items), approved by Customer, is included in this proposal.

Enclosure (A) previously submitted to Customer by CCP No. 104B (52-Inch Wide Passenger Seat) is revised for information to show seat height from floor approximately 18 inches in lieu of 17.2 inches, and revision to width of arm rests to reflect padding requested by Customer.



CONVAIR 880 52" SEAT - TWA

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,460 DTD _____

CHANGE NO: 328

MODEL: 22-1 (Convair "880")

TITLE: **Specification Administrative Change (Revision to P/N of Fuel Flowmeter Transmitter)**

ORIGIN: **Convair initiated, based on General Electric revision to subject part.**

REASON FOR CHANGE: **To incorporate an improved brush rigging in the synchro motor of the transmitter on 17 airplanes, and in part on an 18th airplane.**


| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|----------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| Negligible | Negligible | Negligible INCH L.B. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:


 ENGINEERING APPROVAL

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

BY: _____

DATE: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

Title: Specification Administrative Change (Revision to P/N of Fuel Flowmeter Transmitter)

Origin: Convair initiated, based on General Electric revision to subject part.

Reason for Change: To incorporate an improved brush rigging in the synchro motor of the transmitter on 17 airplanes, and in part on an 18th airplane.

Description of Change:

Page A-2 Rev., APPENDIX I-C, POWER PLANT EQUIPMENT:

Revise the below item under "Fuel System Equipment" as follows:

| | | | |
|--------------|----------------------------------|---------------|-------------|
| <u>From:</u> | "4 Fuel Flow Transmitter | Gen. Electric | 8TJ59GAD-1" |
| <u>To:</u> | "** 4 Fuel Flowmeter Transmitter | Gen. Electric | 8TJ59GAM-2 |
| | *** 4 Fuel Flowmeter Transmitter | Gen. Electric | 8TJ59GAM-3" |

Add the following to the bottom of Page A-2 Rev.

"**Applies to Airplanes 1 through 12
*** Applies to Airplanes 14 through 30

Note: Airplane 13 will be equipped with 1 unit P/N 8TJ59GAM-2 and 3 units P/N 8TJ59GAM-3".

Effect on Weight Empty: Negligible
Effect on Balance: Negligible
Effect on Performance: None

The following shall not appear in the specification language:

The prior changes to fuel flowmeter transmitter from P/N 8TJ59GAD-1 to P/N 8TJ59GAM-2 consisted of the following:

1. Change from 8TJ59GAD-1 to 8TJ59GAM-1 - G.E. request that internal case on transmitter be a soldered joint in lieu of a welded joint to provide better access and to reduce scrappage.
2. Change from 8TJ59GAM-1 to 8TJ59GAM-2 - Convair request for alteration of mounting bracketry to eliminate flowmeter interference with pod door frame.

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO. ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,428 DTD 25 September 1959


CHANGE NO: 326A

MODEL: 22-1 (Convair "880")

TITLE: Drip Sticks, Installation of

ORIGIN: TWA/Convair Meetings of 21-23 September 1959, and TWA TWX 880-1147A-282 dated 4 December 1959

REASON FOR CHANGE: Customer request, and revision to CCP No. 326.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|---|-----------------|--|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| +23.0 | +23.0 lbs | +20,765 INCH LB. |
| EFFECT ON GUARANTEED PERFORMANCE: * | | |
| None | | |
| * NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES: | |  ENGINEERING APPROVAL |
| LATEST DATE OF ACCEPTANCE: | | AIRPLANES AFFECTED: |
| SPECIAL PROVISIONS: | | EFFECT ON PRICE PER AIRPLANE: RECURRING: _____ NON-RECURRING: _____ TOTAL: _____ |

ACCEPTED: _____

BY: _____

DATE: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

CONVAIR: SD

Hughes Tool Company
Change No. 326A

Title: Drip Sticks, Installation of

Origin: TWA/Convair Meetings of 21-23 September 1959, and TWA TWX
880-1147A-282 dated 4 December 1959.

Reason for Change: Customer request, and revision to CCP No. 326.

Description of Change:

Page 52, Paragraph 3.12.9.9.3 DIP STICKS:

Revise the paragraph title and paragraph to read as follows:

"DRIP STICKS: A total of ten tube-type drip sticks graduated in inches, shall be installed in the underwing side of the fuel tanks to provide for underwing fuel level indication. The drip sticks shall be installed in the following locations:

One in each inboard main fuel tank
One in each inboard replenishing fuel tank
Two in each outboard main fuel tank
One in each outboard replenishing fuel tank."

Effect on Weight Empty: +23.0 pounds
Effect on Balance: +20,765 inch-pounds
Effect on Performance: None

The following shall not appear in the specification language:

With this change, fuel unmeasurable by drip sticks shall be approximately 17,200 pounds at low level and 6,900 pounds at high level.

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,429 DTD 1 October 1959

CHANGE NO: 325

MODEL: 22-1 (Convair "880")

TITLE: **Terrain Warning System, Bell Installation for**

ORIGIN: **TWA Letter No. 880-1082, dated 23 September 1959**

REASON FOR CHANGE: **Customer request**

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|----------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| +2.0 lb | +2.0 lb | +412 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

| | |
|--|--|
| <p>* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL</p> <p>ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:</p> | <p style="text-align: center;"><i>B. J. Simons</i></p> <p style="text-align: center;">ENGINEERING APPROVAL</p> |
|--|--|

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 325

Title: Terrain Warning System, Bell Installation for

Origin: TWA Letter No. 880-1082, dated 23 September 1959

Reason for Change: Customer request

Description of Change:

Page 103, Paragraph 3.17.4.2 - TERRAIN WARNING TRANSCIVER:

Add the following sentence to the end of paragraph:

"A terrain warning single-stroke bell, which will sound whenever the airplane is operating below a predetermined safe altitude, shall be installed on the overhead in the flight compartment forward of the pilot's console".

Page A-7, APPENDIX I-C, ELECTRONIC EQUIPMENT:

Add the following item under "TERRAIN WARNING SYSTEM"

"1 Warning Bell

Edwards

MD3793-24V"

Effect on Weight Empty: +2.0 lbs
Effect on Balance: +412 inch/lbs
Effect on Performance: None

C O N V A I R

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,433 DTD 2 October 1959

CHANGE NO. 324

MODEL: 22-1 (Convair "880")

TITLE: **Nose Wheel Brake Deactivation, Installation of Switch for**

ORIGIN: **TWA verbal request (R. Rourke to P.T. Gerrity) on 1 October 1959**

REASON FOR CHANGE: **Customer request**

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * | |
|--------------------|-----------------|---------------------|----------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | | |
| Negligible | Negligible | Negligible | INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

J. H. Sharp

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

FORM 1-59 6-12174

CONVAIR: SD

Hughes Tool Company
Change No. 324

Title: Nose Wheel Brake Deactivation, Installation of
Switch for

Origin: TWA verbal request (R. Rourke to P.T. Gerrity)
on 1 October 1959.

Reason for Change: Customer request.

Description of Change:

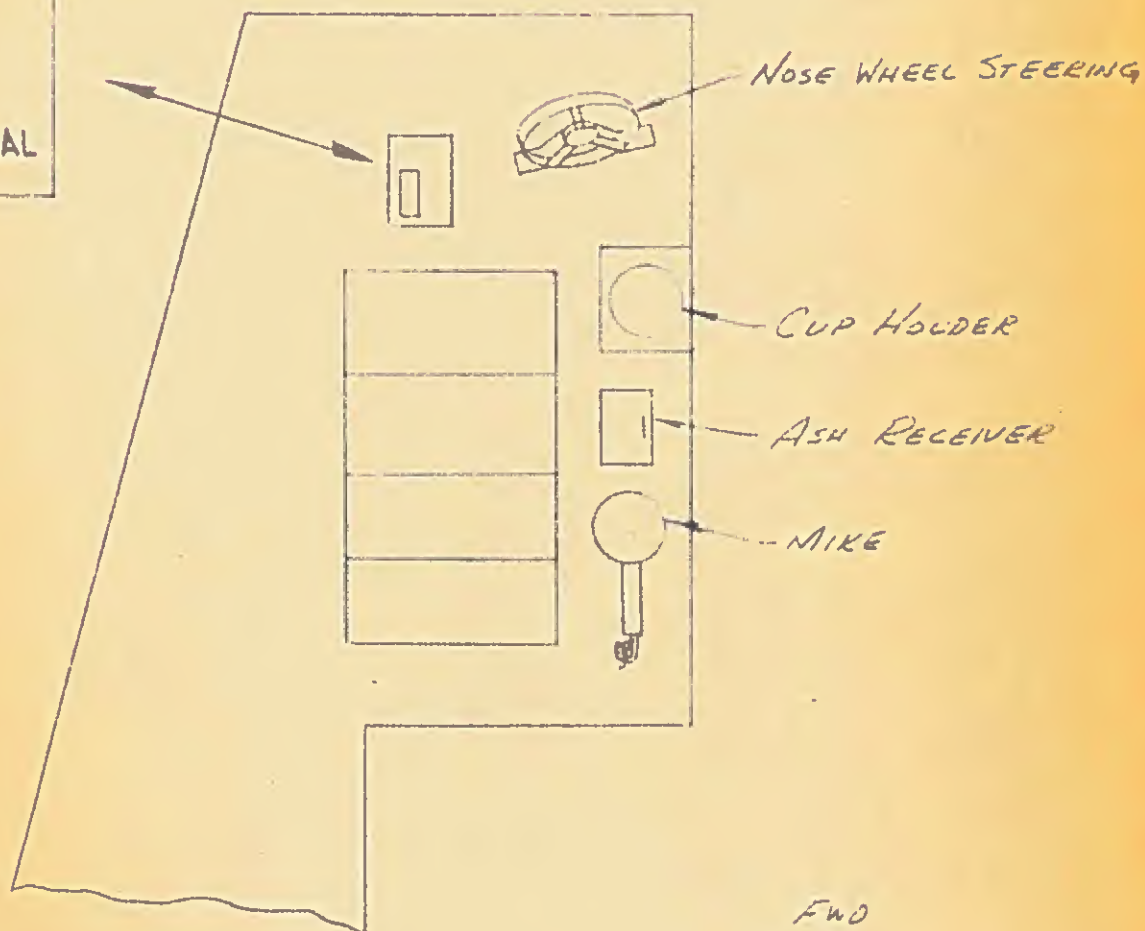
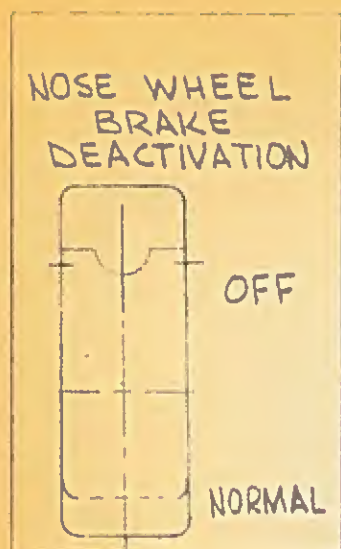
Page 35, Paragraph 3.8.4.2 - WHEELS AND BRAKES:

Add the following sentence, after the third sentence:

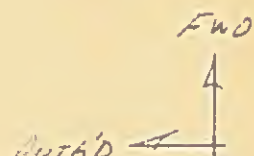
"A switch shall be provided to electrically close the normally open anti-skid valve in the hydraulic supply line to the nose wheel brakes, to block off hydraulic pressure in the event of malfunction".

Enclosure: (A) One copy of Convair Sketch SK-102659-1, Switch
and Placard - Nose Wheel Brake Deactivation (For
information only)

Effect on Weight Empty: Negligible
Effect on Balance: Negligible
Effect on Performance: None



CONSOLE - PILOTS



SWITCH & PLACARD -
NOSE WHEEL BRAKE DEACTIVATION
- TWA -

L. G. J.

SK 102659-1

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,456 DTD 6 October 1959

CHANGE NO: 323

MODEL: 22-1 (Convair "880")

TITLE: Corrosion Preventive Coating to Exterior Aluminum Alloy Surfaces, Application of

ORIGIN: Convair initiated

REASON FOR CHANGE: a. To provide an exterior finish that will be more serviceable, repairable and easier to clean than unpainted skins.
b. Optimum corrosion protection of the airplane.

EFFECT ON WEIGHT *

EFFECT ON BALANCE *

GUAR. WT. EMPTY

OPER. WT. EMPTY

+100.0 lb

+100.0 lb

+98,800

INCH LB.

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:



ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 323

Title: Corrosion Preventive Coating to Exterior Aluminum Alloy Surfaces,
Application of

Origin: Convair initiated

Reason for Change: See cover sheet

Description of Change:

Page A-15, APPENDIX I-C, FURNISHINGS:

Revise the below item in Description List as follows:

From: "Exterior Marking and Color Scheme Paint 104.0 lb"
(Including weight for CAA numbers and
identification)"

To: "Exterior Marking, Color Scheme and Pro- 204.0 lb"
tective Paint (Including weight for FAA
numbers, identification and control sur-
face balance)

Effect on Weight Empty: +100.0 pounds
Effect on Balance: +98,800 inch-pounds
Effect on Performance: None

The following shall not appear in the specification language:

This change covers the painting of all bare exterior surfaces, except where peculiar conditions require alternate treatment, and proposes the following paints:

- a. One coat "Epoxy" prime, Spec. O-03021 - Type I
- b. One coat pigmented "Epoxy", top coat, Spec. O-03021 - Type II

(Convair recommends gloss grey to simulate aluminum alloy appearance; however, Customer may select desired color without affecting task shown herein.)

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,423 DTD 19 August 1959

CHANGE NO: 322A

MODEL: 22-1 (Convair "880")

TITLE: D-C Energized Ignition System, Installation of


ORIGIN: TWA Letter No. 880-1030, dated 3 August 1959

REASON FOR CHANGE: Customer request, and revision to CCP No. 322

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| +13.0 lb | +13.0 lb | +4,467 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

| | |
|--|---|
| <p>* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL</p> <p>ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:</p> |  ENGINEERING APPROVAL |
|--|---|

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED _____

BY _____

DATE _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

CONVAIR: SD

Hughes Tool Company
Change No. 322A

Title: D-C Energized Ignition System, Installation of

Origin: TWA Letter No. 880-1030, dated 3 August 1959

Reason for Change: Customer request, and revision to CCP No. 322

Description of Change:

Page 78, add the following new paragraph, after Paragraph 3.16.9.1:

"3.16.9.2 - IGNITION SYSTEM POWER SOURCE: The ignition system shall normally be energized from an A-C power source; however, a static inverter shall be installed for energizing the ignition system from a D-C power source".

Page 82, Paragraph 3.16.14 - BOOSTER COIL:

Delete the paragraph and title and substitute the following:

"3.16.14 - IGNITION UNITS: Ignition units (including booster coil) shall be furnished with the engine".

Effect on Weight Empty: +13.0 lbs
Effect on Balance: +4,467 inch/lbs
Effect on Performance: None

The following shall not appear in the specification language:

The static inverter also supplies A-C power to the fuel flow and exhaust gas temperature instrumentation during starting with the alternate source.

C O N V A I R

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,424 DTD 26 August 1959

CHANGE NO: 317

MODEL: 22-1 (Convair "880")

TITLE: Coax Cable Connections, Change of

ORIGIN: TWA/Convair Meetings 22-26 June 1959, and TWA Letter No. 880-1031 dated 5 August 1959

REASON FOR CHANGE. Customer request

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|------------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| <u>+7.0 lbs</u> | <u>+7.0 lbs</u> | <u>+2,422</u> INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

B. J. Simons

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

Title: Coax Cable Connections, Change of

Origin: TWA/Convair Meetings 22-26 June 1959, and TWA Letter No. 880-1031 dated 5 August 1959.

Reason for Change: Customer request

Description of Change:

This proposal has no effect on specification language, and consists of the following:

- A. Replace 12080S Raytherm flex with RG/8U flex connections to the radio rack equipment.
- B. Fabricate eleven new harnesses as replacements for the following:

| <u>SYSTEM</u> | <u>HARNESS</u> | <u>LENGTH (Inches)</u> |
|------------------|----------------|------------------------|
| a. HF No. 1 | 22-33925-B | 189 |
| b. HF No. 2 | -33925-801 | 190 |
| c. VHF No. 1 - R | -32830 | 370 |
| d. VHF No. 1 - T | -32829 | 331 |
| e. VHF No. 2 | -32972 | 204 |
| f. M.B. | -33872 | 403 |
| g. ATC No. 1 | -33870 | 270 |
| h. ATC No. 2 | -33871 | 345 |
| i. DMET No. 1 | -33873 | 180 |
| j. DMET No. 2 | -33965 | 173 |
| k. Terrain Warn. | -33740 | 220 |

Effect on Weight Empty: +7.0 lbs
Effect on Balance: +2,422 In/Lbs.
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,420 DTD 13 August 1959

CHANGE NO: 316

MODEL: 22-1 (Convair "880")

TITLE: Continuous Fire Detector Element Support Clamps, Change of

ORIGIN: TWA Letter No. 880-1035, dated 4 August 1959

REASON FOR CHANGE: Customer request

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| +5.0 lbs | +5.0 lbs | +4,000 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

R. J. Simons

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 316

Title: Continuous Fire Detector Element Support Clamps, Change of

Origin: TWA Letter No. 880-1035, dated 4 August 1959

Reason for Change: Customer request

Description of Change:

This proposal has no effect on specification language, and consists of replacing the standard "ADEL" clamps with "FENWAL" quick attach-detach-type clamps.

Effect on Weight Empty: +5.0 lbs.
Effect on Balance: +4,000 inch-lbs
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER Hughes Tool Company

MCL 10,422 DTD 13 August 1959

CHANGE NO: 314

MODEL: 22-1 (Convair "880")

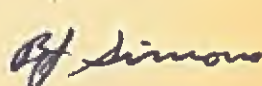
TITLE: Electronic Equipment Spare Fuse Stowage, Installation of

ORIGIN: TWA Letter No. 880-1034, dated 4 August 1959

REASON FOR CHANGE: Customer request.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | Negligible INCH LB. |
| Negligible | Negligible | |

EFFECT ON GUARANTEED PERFORMANCE: *
None

| | |
|---|---|
| * NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL |  ENGINEERING APPROVAL |
| ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES: | |

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 314

Title: Electronic Equipment Spare Fuse Stowage, Installation of

Origin: TWA Letter No. 880-1034, dated 4 August 1959

Reason for Change: Customer request.

Description of Change:

Page 94, Paragraph 3.17.1.5 RADIO AND ELECTRONIC EQUIPMENT COMPARTMENT:

Add the following sentence to the end of the paragraph:

"A spare fuse holder complete with a full complement of fuses shall be installed convenient to the radio rack area for in-flight use."

Effect on Weight Empty: Negligible
Effect on Balance: Negligible
Effect on Performance: Negligible

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,421 DTD 13 August 1959

CHANGE NO: 313

MODEL: 22-1 (Convair "880")

TITLE: Second ATC Transponder Beacon, Installation of

ORIGIN: TWA Letter No. 880-1026, dated 31 July 1959

REASON FOR CHANGE: Customer request.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|-----------------------|
| QUART. WT. EMPTY | OPER. WT. EMPTY | |
| <u>24.0 lb</u> | <u>24.0 lb</u> | <u>6,408</u> INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRICE ACCEPTANCE OF THE FOLLOWING CHANGES:

[Signature]

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

Title: Second ATC Transponder Beacon, Installation of

Origin: TWA Letter No. 880-1026, dated 31 July 1959

Reason for Change: Customer request.

Description of Change:

Page 89, Paragraph 3.17.1 EQUIPMENT:

Revise the below item under "Description" as follows:

From: "ATC Transponder Beacon System"

To: "Dual-ATC Transponder Beacon System"

Delete the below item under "Provisions for the following systems shall be made":

"Second ATC Transponder Beacon System"

Page 103, Paragraph 3.17.4.4 RADAR SAFETY BEACON:

Revise the first sentence as follows:

From: "An ATC Transponder Beacon shall be installed"

To: "A dual-ATC Transponder Beacon system shall be installed."

Delete the second sentence which reads as follows:

"Provisions shall be made for a second unit."

Page 103, Paragraph 3.17.4.4.1 CONTROL:

Revise the paragraph as follows:

From: "One ATC Transponder Beacon control shall be provided on the radio control panel and provisions shall be made for a second."

To: "Dual-ATC Transponder Beacon control shall be installed on the radio control panel."

Page A-6, APPENDIX I-C, ELECTRONIC EQUIPMENT:

Revise the below item under "ATC TRANSPONDER BEACON" as follows:

From: "1 Transponder Unit

Wilcox

714B"

To: "2 Transponder Units Wilcox Type 714B"

Page A-7, APPENDIX I-C, ELECTRONIC EQUIPMENT:

Revise the below item under "CONTROL PANELS" as follows:

From: "1 ATC Transponder Beacon Cables G-554-V"

To: "1 Dual-ATC Transponder Beacon Cables G-554-V"

Effect on Weight Empty: 424.0 pounds
Effect on Balance: 46,408 inch-pounds
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,413 DTD 2 July 1959

CHANGE NO: 312

MODEL: 22-1 (Convair "880")

TITLE: Gables G-551 Audio Selector Panel, Modification of

ORIGIN: TWA requested by Letter No. 880-976 dated 11 June 1959

REASON FOR CHANGE: Customer request.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | 0 INCH LB. |
| 0 | 0 | |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

J. H. Sharp
ENGINEERING APPROVAL

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|--------------------|-------------------------------|
| SPECIAL PROVISIONS | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 312

Title: Gables G-551 Audio Selector Panel, Modification of

Origin: TWA requested by Letter No. 880-976 dated 11 June 1959

Reason for Change: Customer request.

Description of Change:

This proposal has no effect on the specification language and consists of modifying the existing "Gables G-551" Audio Selector Panels to improve the operation of the audio volume control. This modification will include the deletion of the volume limiting resistor, and the installation of a 1500-ohm audio taper potentiometer. The four panels effected are located as follows:

Radio rack
Flight engineer's station
Pilot's side console
Copilot's side console

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

CONVAIR

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER Hughes Tool Company

MCL 10,419 DTD 27 July 1959 Revised

CHANGE NO. 311A

MODEL 22-1 (Convair "880")

TITLE: Passenger Cabin and Club Area Interior, Changes to


ORIGIN: Delta requested and Convair proposed to TWA

REASON FOR CHANGE: As above, and revision to CCP No. 311

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|-----------------------|-----------------------|----------------------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| Proposal "A" +17.0 lb | Proposal "A" +17.0 lb | Proposal "A" +14,161 Inch Lb. |
| Proposal "B" Negl. | Proposal "B" Negl. | Proposal "B" Negligible INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE *

None

| | |
|--|---|
| <p>* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL</p> <p>ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:</p> |  ENGINEERING APPROVAL |
|--|---|

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
|----------------------------|---------------------|

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS. | EFFECT ON PRICE PER AIRPLANE. |
| | RECURRING _____ |
| | NON-RECURRING _____ |
| | TOTAL _____ |

APPROVED: _____

BY: _____

DATE: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

Title: Passenger Cabin and Club Area Interior, Changes to

Origin: Delta requested and Convair proposed to TWA

Reason for Change: As above, and revision to CCP No. 311

Description of Change:

PROPOSAL "A"

This proposal has no effect on specification language, and consists of removing gold mylar under valance lights in passenger cabin and club area, and replacing with ten-ounce vinyl coated fibreglas trim backed by an aluminum panel. Customer finish specification will be revised to show this change on approval of this proposal.

Effect on Weight Empty: +17.0 lbs
Effect on Balance: +14,161 inch-lbs
Effect on Performance: None

PROPOSAL "B"

This proposal has no effect on specification language and consists of deleting pip pin retention strap from club area seat legs.

Effect on Weight Empty: Negligible
Effect on Balance: Negligible
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,415 DTD 2 July 1959

CHANGE NO: 310A

MODEL: 22-1 (Convair "880")

TITLE: Radome Protection, Revision to

ORIGIN: TWA/Convair Meeting of 22 June 1959, and Discussion between J. W. Bew of TWA and R. Parsons of Convair on 4 November 1959.

REASON FOR CHANGE: Customer request, and revision to CCP No. 310.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|-----------------------|------------------------|-------------------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| Proposal "A" Negl. | Proposal "A" Negl. | Proposal "A" Negl. |
| Proposal "B" -26.0 Lb | Proposal "B" -26.0 Lb. | Proposal "B" -12,391 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:


ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

Title: Radome Protection, Revision to

Origin: TWA/Convair Meeting of 22 June 1959, and Discussion between J. W. Bew of TWA and R. Parsons of Convair on 4 November 1959.

Reason for Change: Customer request, and revision to CCP No. 310.

Description of Change:

PROPOSAL "A"

Page 103, Paragraph 3.17.4.1 WEATHER PENETRATION AIRBORNE RADAR:

Revise the third sentence as follows:

From: "The radome shall be suitably anti-iced."

To: "The radome shall be protected by an anti-erosion boot with provisions for de-icing."

Page 124, Paragraph 3.20.2.1 ANTI-ICING OF NONTRANSPARENT AREAS:

Revise the last sentence as follows:

From: "Adequate de-icing means shall be incorporated for de-icing of the radome."

To: "An anti-erosion boot shall be installed for protection of the radome with provisions for a radome de-icing system."

Effect on Weight Empty: Negligible
Effect on Balance: Negligible
Effect on Performance: None

The following shall not appear in the specification language:

This change consists of disconnecting the de-icer air line at the bleed air duct and installing a tube cap and duct connection plug.

The de-ice type boot will be retained to perform its anti-erosion function.

To revise a radome from a de-icer boot configuration to a rain erosion cap configuration the following will be required:

Strip radome of anti-static coating and lightning protection strips and recoat radome with anti-static coating per Convair Spec. 0-05043 and add lightning protection foil strips per Convair Dwg. 22-71001. Also patch hole on upper centerline which is required for de-icer system.

PROPOSAL "B"

Page 103, Paragraph 3.17.4.1 WEATHER PENETRATION AIRBORNE RADAR:

Revise the third sentence as follows:

From: "The radome shall be suitably anti-iced."

To: "The radome shall be protected by an anti-erosion boot."

Page 124, Paragraph 3.20.2.1 ANTI-ICING OF NONTRANSPARENT AREAS:

Delete the last sentence "(Adequate de-icing means shall be incorporated for de-icing of the radome.)"

Page 126A, AIR CONDITIONING PRESSURIZATION SYSTEM:

Revise the above illustration by deleting all reference to radome de-icing.

Effect on Weight Empty: -26.0 pounds
Effect on Balance: -12,391 inch-pounds
Effect on Performance: None

The following shall not appear in the specification language:

This change removes all radome de-icing equipment and revises the circuit breaker and the flight engineer's panel to eliminate controls, warning light and circuit protection.

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,417 DTD 2 July 1959

CHANGE NO: 309

MODEL: 22-1 (Convair "880")

TITLE: Fuel Gaging System, Revision to

ORIGIN: TWA/Convair Meeting of 26 June 1959; and TWA
Letter No. 880-949 dated 12 May 1959

REASON FOR CHANGE: Customer request

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * | |
|---------------------|---------------------|---------------------|----------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | Proposal A - 0.0 | Inch Lb |
| Proposal A - 0.0 lb | Proposal A - 0.0 lb | Proposal B + 300 | Inch Lb |
| Proposal B + 1.0 lb | Proposal B + 1.0 lb | Proposal C + 300 | INCH LB. |
| Proposal C + 1.0 lb | Proposal C + 1.0 lb | | |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND
TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON
PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

J. H. Sharp

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 309

Page 1 of 2

Title: Fuel Gaging System, Revision to

Origin: TWA/Convair Meeting of 26 June 1959; and TWA Letter
No. 880-949 dated 12 May 1959.

Reason for Change: Customer request

Description of Change:

PROPOSAL "A"

Page A-10, APPENDIX I-C, INSTRUMENTS AND RELATED EQUIPMENT:

Revise the below items in the Description List as follows:

| | | | |
|--------------|--|----------|-----------------------|
| <u>From:</u> | "2 Fuel Quantity Indic. Repeater | Simmonds | 383093-01-01 |
| | 2 Fuel Quantity Indic. Repeater | Simmonds | 383093-01-02 |
| | 2 Fuel Quantity Indic. Tank #1 & #4 | Simmonds | 393022-01-01 |
| | 2 Fuel Quantity Indic. Tank #2 & #3 | Simmonds | 393022-01-02 |
| <u>To:</u> | "2 Fuel Quantity Indic. Repeater | Simmonds | (P/N to be supplied) |
| | 2 Fuel Quantity Indic. Repeater | Simmonds | (P/N to be supplied) |
| | 2 Fuel Quantity Indic. Tank No. 1 & No. 4 | Simmonds | (P/N to be supplied) |
| | 2 Fuel Quantity Indic. Tank No. 2 & No. 3 | Simmonds | (P/N to be supplied)" |

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

The following shall not appear in the specification language:

The proposed fuel indicators will be designed to accept the Series 67
amphenol connectors in lieu of the Series 165 connectors.

PROPOSAL "B"

Same as Proposal "A" except, includes the installation of four in-line maintenance disconnects in the co-axial wiring which does not effect the specification language.

Effect on Weight Empty: +1.0 Lb
Effect on Balance: +300 Inch-Lbs
Effect on Performance: None

PROPOSAL "C"

This proposal has no effect on the specification language and consists only of the installation of four in-line maintenance disconnects in the co-axial wiring, retaining the existing Series 165 connectors.

Effect on Weight Empty: +1.0 Lb
Effect on Balance: +300 Inch-Lbs
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO. ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,416 DTD 2 July 1959

CHANGE NO: 308

MODEL: 22-1 (Convair "880")

TITLE: Air Conditioning System, Revision to Reset of

ORIGIN Convair/TWA Meeting of 22 June 1959

REASON FOR CHANGE: Customer request

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| +2.0 lbs | +2.0 lbs | +773 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *
None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES

L. H. Short
ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

(OPTIONAL) - SEE INSTRUCTIONS

CONVAIR: SD

Hughes Tool Company
Change No. 308

Title: Air Conditioning System, Revision to Reset of

Origin: TWA/Convair Meeting of 22 June 1959

Reason for Change: Customer request

Description of Change:

Page 119, Paragraph 3.20.1.2 - AIR CONDITIONING CONTROLS:

Add the following sentence after the first sentence:

"A "push-to-reset" switch for each Freon compressor shall be installed at the flight engineer's station to permit re-setting of either unit from the flight compartment".

Effect on Weight Empty: +2.0 lbs
Effect on Balance: +773 Inch-lbs
Effect on Performance: None

C O N V A I R

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,403 DTD 27 May 1959

CHANGE NO: 307

MODEL: 22-1 (Convair "880")

TITLE: Instrument Panel Lighting, Revision to

ORIGIN: Verbal request by TWA

REASON FOR CHANGE: Customer request

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| +2.0 lbs | +2.0 lbs | +404 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

J. H. Sharp
ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE: _____

AIRPLANES AFFECTED: _____

SPECIAL PROVISIONS: _____

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

Title: Instrument Panel Lighting, Revision to

Origin: Verbal request by TWA

Reason for Change: Customer request

Description of Change:

Page 61A, PILOT'S AND COPILOT'S INSTRUMENT PANELS:

Revise above illustration to show fluorescent, panel light dimming control in lieu of white panel light control.

Page 61B, PILOT'S AND COPILOT'S CONSOLE AND WING PANELS:

Revise above illustration to show white panel light control adjacent to pilot panel red light control, and immediately below the emergency air pressure indicator, and relocate the static select switch outboard on the panel.

Page 74 (Cont), Paragraph 3.16.8.2.2 - INSTRUMENT PANELS:

Revise the last sentence as follows:

From: "Control of these lights shall be by a switch within the white incandescent flood light rheostat, so arranged that when rheostat is turned to maximum the fluorescent lights will illuminate and supplement the normal white incandescent lighting".

To: "Control of these lights shall be by a dimming rheostat, located on the pilot's panel to control the light intensity from dim to full brilliance as required to supplement the normal white incandescent lighting".

Effect on Weight Empty: +2.0 Lbs
Effect on Balance: +404 Inch-Lbs
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER Hughes Tool Company

MCL 10,451 DTD _____

CHANGE NO 305

MODEL: 22-1 (Convair "880")

TITLE Specification Administrative Change (Revision to Paragraph 3.12.9.9.6 and 3.14.3.6)

ORIGIN Convair initiated

REASON FOR CHANGE: To-clarify the intent of the specification.

EFFECT ON WEIGHT *

EFFECT ON BALANCE *

GUAR. WT. EMPTY

OPER. WT. EMPTY

0

0

0

INCH LB.

EFFECT ON GUARANTEED PERFORMANCE: *

None

ALL ELIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

J. H. Sharp

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

Title: Specification Administrative Change (Revision to Paragraphs 3.12.9.9.6 and 3.14.3.6)

Origin: Convair initiated

Reason for Change: To clarify the intent of the specification.

Description of Change:

Page 52, Paragraph 3.12.9.9.6 - FUEL TANK TEMPERATURE INDICATION:

Revise the paragraph to read as follows:

"FUEL TEMPERATURE INDICATION: Five sensing elements shall be installed to transmit fuel temperature. One shall be so located in the fuel tank that the temperature indicated shall be the most critical from a freezing standpoint. One indicator shall be used in connection with a selector switch to indicate fuel inlet temperature to each engine fuel filter and the fuel tank."

Page 60, Paragraph 3.14.3.6 - INSTRUMENT LINES AND CONNECTIONS:

Revise the first sentence as follows:

From: "Instrument lines shall be color coded in accordance with Design Drawing No. AND10375."

To: "Instrument lines shall be color coded in accordance with Standard AND10375."

Revise the ninth sentence as follows:

From: "Flexible connections shall incorporate 1/4-inch hoses on the static side and 3/16-inch hoses on the pitot side."

To: "Flexible connections shall incorporate 1/4-inch hoses, with different size fittings to prevent cross connection."

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,410 DTD 11 June 1959

CHANGE NO: 305

MODEL: 22-1 (Convair "880")

TITLE: Seat Row 13 Placard, Deletion of

ORIGIN: TWA Letter No. 880-955, dated 21 May 1959

REASON FOR CHANGE: Customer request.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * | |
|--------------------|-----------------|---------------------|----------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | | |
| Proposal "A" 0 | Proposal "A" 0 | Proposal "A" 0 | Inch-Lb |
| Proposal "B" 0 | Proposal "B" 0 | Proposal "B" 0 | INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *
None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND
TOTALY REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON
PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

J. H. Sharp

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

COMVAIR: SD

Hughes Tool Company
Change No. 305

Title: Seat Row 13 Placard, Deletion of

Origin: TWA Letter No. 880-955, dated 21 May 1959

Reason for Change: Customer request.

Description of Change:

PROPOSAL "A"

This proposal has no effect on specification language, and consists of deleting placard for seat row 13 and replacing it with a number 14 placard. The seat rows following the new row 14 shall be numbered 15 through 23.

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

PROPOSAL "B"

This proposal has no effect on specification language, and consists of replacing placard for seat row 13 with a placard numbered 12a.

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,350 DTD _____

CHANGE NO. 304

MODEL: 22-1 (Convair "880")

TITLE: **Specification Administrative Change (Revision to Electronic and Electrical Component Cooling)**

ORIGIN: **Convair initiated.**

REASON FOR CHANGE: **Product improvement.**


| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| 0 | 0 | 0 INCH L.B. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:


 ENGINEERING APPROVAL

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
|----------------------------|---------------------|

| | |
|---------------------|------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____ CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 304

Title: Specification Administrative Change (Revision to Electronic and Electrical Component Cooling)

Origin: Convair initiated.

Reason for Change: Product improvement.

Description of Change:

Page 126A, FIGURE 3.20-1 AIR CONDITIONING AND PRESSURIZATION SYSTEM:

Above illustration to be revised to show the effects of this proposal.

Enclosure: (A) One copy Convair Sketch - AIRFLOW PATTERN SHOWN FOR NORMAL INFLIGHT MODE (For information only)

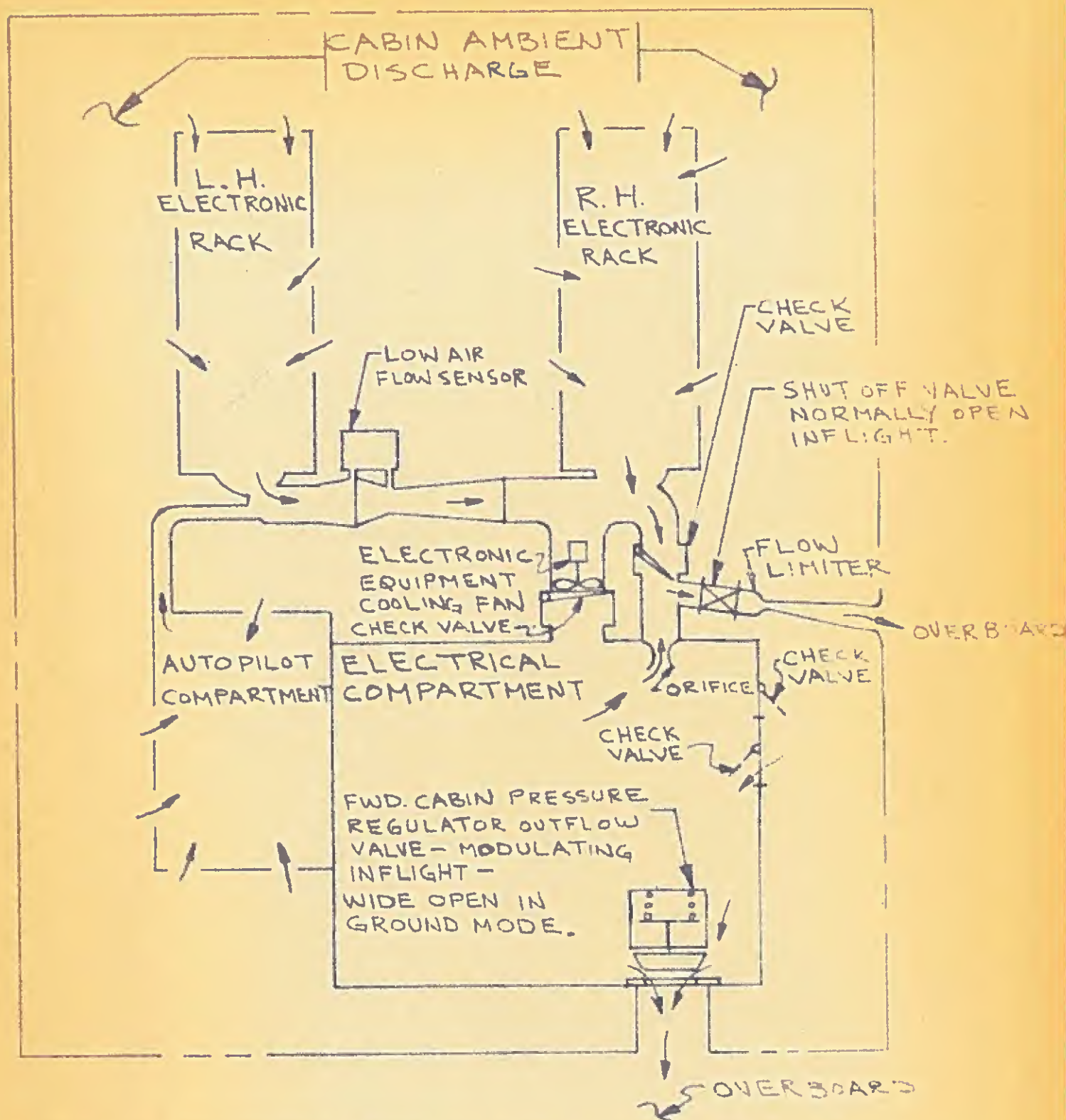
Enclosure: (B) One copy of Convair Sketch - ELECTRICAL EQUIPT COOLING VALVE LOCATION (For information only)

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

The following shall not appear in the Specification language:

The system is being redesigned to provide an overboard discharge duct, shut-off valve and Venturi from the electrical and electronic compartments. The overboard discharge duct will provide cooling during flight except at low altitudes when the cabin pressure differential is low. On the ground and during the low altitude conditions the present electronic cooling blower will be used. A shut-off valve will be provided in the discharge line which will be open at all times. This valve can be closed by a switch on the flight engineer's panel at the option of the crew when and if required in the event of loss of normal air flow to the cabin. The cabin pressure system will be revised to eliminate the differentiator bias. Its operation will be completely independent of the electronic cooling system. Enclosure (A) defines the proposed arrangement.

MODEL 22 ELECTRONIC COOLING SCHEMATIC



AIRFLOW PATTERN SHOWN FOR NORMAL INFLIGHT MODE.

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO. ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,349 DTD _____

CHANGE NO 303

MODEL: 22-1 (Convair "880")


TITLE: **Specification Administrative Change (Delete "WIRELON" designation from Par. 3.16.6)**

ORIGIN **Convair initiated.**

REASON FOR CHANGE: **Product improvement.**

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| 0 | 0 | 0 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *
None

| | |
|---|--|
| * NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES: |  ENGINEERING APPROVAL |
|---|--|

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 303

Title: Specification Administrative Change (Delete "WIRELON"
designation from Par. 3.16.6)

Origin: Convair initiated.

Reason for Change: Product improvement.

Description of Change:

Page 70, Paragraph 3.16.6 BONDING AND SHIELDING:

Revise the second sentence as follows:

From: "Bonding exposed to the windstream shall be "Wirelon" or
equivalent."

To: "Bonding exposed to the windstream shall be in accordance
with MS-25083."

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,412 Revised
DTD 25 September 1959

CHANGE NO: 302A

MODEL: 22-1 (Convair "880")

TITLE: Duct Temperature Indication, Air Conditioning System, Provisions for

ORIGIN: TWA Letter No. 880-969 dated 9 June 1959, and TWA Letter No. 880-1065 dated 2 September 1959

REASON FOR CHANGE: Customer request, and revision to CCP No. 302

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| +2.0 lb | +2.0 lb | +2,184 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

B. J. Simmons

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE: _____

AIRPLANES AFFECTED: _____

SPECIAL PROVISIONS: _____

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 302A

Title: Duct Temperature Indication, Air Conditioning System, Provisions for

Origin: TWA Letter No. 880-969 dated 9 June 1959, and TWA Letter No. 880-1065 dated 2 September 1959.

Reason for Change: Customer request, and revision to CCP No. 302.

Description of Change:

Page 119, Paragraph 3.20.1.2 - AIR CONDITIONING CONTROLS:

Add the following after the second sentence:

"Provisions shall be made for the later installation of a replacement temperature indicator for the existing indicator, and a three-position selector switch for indication of cabin and flight compartment air supply duct temperatures. These provisions shall consist only of the installation of the necessary wiring, and the cabin and flight compartment air supply duct temperature sensing elements".

Page 123, Paragraph 3.20.1.10.2 - TEMPERATURE INDICATION:

Add the following sentence after the first sentence:

"The cabin and flight compartment inlet air temperature sensing elements shall be located with the cabin and flight compartment temperature control system anticipators".

Effect on Weight Empty: +2.0 pounds
Effect on Balance: +2,184 inch-pounds
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,418 DTD Revised 11-11-59

CHANGE NO: 300

MODEL: 22-1 (Convair "880")

TITLE: Third Altimeter, Installation of

ORIGIN: TWA Letter No. 880-970, dated 9 June 1959

REASON FOR CHANGE: Customer request.

EFFECT ON WEIGHT *

EFFECT ON BALANCE *

| | | |
|-----------------|-----------------|---------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| +2.0 lb | +2.0 lb | +408 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

J. H. Sharp

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE: _____ AIRPLANES AFFECTED: _____

SPECIAL PROVISIONS: _____ EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____
NON-RECURRING: _____
TOTAL: _____

ACCEPTED: _____ CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 300

Title: Third Altimeter, Installation of

Origin: TWA Letter No. 880-970, dated 9 June 1959

Reason for Change: Customer request.

Description of Change:

Page 56, Paragraph 3.14.1.1 PILOT'S INSTRUMENTS:

Revise the below item in the instrument list as follows:

From: "One altimeter"

To: "Two altimeters"

Page 61A, FIGURE 3.14-1, PILOT'S AND COPILOT'S INSTRUMENT PANELS:

Revise pilot's portion of above illustration to show third altimeter in present OBI location, and point out new location for OBI.

Page A-10, APPENDIX I-C, INSTRUMENTS AND RELATED EQUIPMENT:

Add the following item under "KOLLSMAN INTEGRATED INSTRUMENT SYSTEM"

"1 Altimeter (three-pointer type) Kollsman 671-CPL-10-051"

Effect on Weight Empty: ~~4~~2.0 pounds

Effect on Balance: ~~4~~08 inch-pounds

Effect on Performance: None

The following shall not appear in specification language:

The specific location for the pilot's omni-bearing indicator will be on the top of the housing for the rudder pedal adjustment mechanism between the pilot's rudder pedals at approximately station 180.

C O N V A I R

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,347 DTD _____

CHANGE NO: 299

MODEL 22-1 (Convair "880")

TITLE: Specification Administrative Change (Revision to Interchangeability of Crew and Passenger Seat Items)

ORIGIN: Convair initiated

REASON FOR CHANGE: To clarify the interchangeability status of crew and passenger seat items

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|----------------------|----------------------|---------------------|
| GUAR. WT. EMPTY 0 | OPER. WT. EMPTY 0 | 0 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *
None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

F. H. Sharp
ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE
RECURRING: _____
NON-RECURRING: _____
TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 299

Title: Specification Administrative Change (Revision to Interchangeability of Crew and Passenger Seats Items)

Origin: Convair initiated

Reason for Change: To clarify the interchangeability status of crew and passenger seat items.

Description of Change:

Page 129, Paragraph 3.23.2 - EQUIPMENT INTERCHANGEABILITY:

Revise the below item under "2 Interchangeable Without Alterations" as follows:

From: "Crew and Passenger Seat and Back Cushions and Arm Rest Covers".

To: "Passenger Seat Covers, Cushions and Arm Rests".

Add the following under "2 Interchangeable Without Alterations":

"Crew Seat Covers (upholstery) and Arm Rests".

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002 DATE: _____

CUSTOMER: Hughes Tool Company MCL 10,399 DTD 7 May 1959

CHANGE NO: 298A MODEL: 22-1 (Convair "880")

TITLE: Cabin Portable Oxygen Cylinders, Revision to

ORIGIN: TWA Letter No. 880-914, dated 6 April 1959, and TWA/Convair Meeting of 28, 29 and 30 April 1959.

REASON FOR CHANGE: Customer request, and revision to CCP No. 298 to show weight effect for operating weight empty only

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|----------------------|-------------------------|---------------------|
| GUAR. WT. EMPTY 0 | OPER. WT. EMPTY -5.0 | -4951 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

B. J. Simmons
ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____
NON-RECURRING: _____
TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

Title: Cabin Portable Oxygen Cylinders, Revision to

Origin: TWA Letter No. 880-914, dated 6 April 1959, and TWA/Convair Meeting of 28, 29 and 30 April 1959.

Reason for Change: Customer request, and revision to CCP No. 298 to show weight effect only for Operating Weight Empty.

Description of Change:

Page 118, Paragraph 3.19.5.6 - PORTABLE BOTTLES:

Revise the second sentence as follows:

From: "Three 310-liter portable oxygen bottles, with demand regulators and mask, and each bottle provided with one Puritan continuous flow mask assembly, shall be provided in the passenger compartment".

To: "Three 310-liter portable oxygen bottles, with each bottle provided with two Puritan disposable continuous flow mask assemblies, shall be provided in the passenger compartment."

Page A-13, APPENDIX I-C, OXYGEN EQUIPMENT:

Revise the below item in the Description List as follows:

From: "#3 Portable O₂ Cylinder
 Assemblies (310-Liter) Scott 5600-B3B"

To: "#3 Portable O₂ Cylinder
 Assemblies (310-Liter) Scott 5500-C1B-JF23D"

Add the following item to the Description List:

"#3 Oxygen Mask (Disposable) Puritan OL-114010"

Effect on Weight Empty: 0 pounds

Effect on Operating Weight Empty: -5.0 pounds

Effect on Balance: -4,951 Inch-Pounds

Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,414 DTD 2 July 1959

CHANGE NO: 297A

MODEL: 22-1 (Convair "880")

TITLE: **Engine Ignition Switch, Revision to**

ORIGIN: **TWA Letter No. 880-1071 dated 22 September 1959**

REASON FOR CHANGE: **Customer request for revision to CCP No. 297**

EFFECT ON WEIGHT *

EFFECT ON BALANCE *

GUAR. WT. EMPTY

OPER. WT. EMPTY

0

0

0

INCH LB.

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

B. J. Simons

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 297A

Title: Engine Ignition Switch, Revision to

Origin: TWA Letter No. 880-1071 dated 22 September 1959

Reason for Change: Customer request for revision to CCP No. 297.

Description of Change:

Page 54A, FIGURE 3.12-1 _ ENGINE STARTING SYSTEM:

Revise above illustration to show fixed position switch in lieu of a momentary switch.

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,344 DTD _____

CHANGE NO: 296

MODEL: 22-1 (Convair "880")

TITLE: Specification Administrative Change (Revision to landing gear part numbers)


ORIGIN: Convair initiated.

REASON FOR CHANGE: To clarify part numbers of certain items of landing gear equipment.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| 0 | 0 | 0 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

| | |
|--|--|
| <p>* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL</p> <p>ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:</p> |  ENGINEERING APPROVAL |
|--|--|

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 296

Title: Specification Administrative Change (Revision to landing gear part numbers)

Origin: Convair initiated.

Reason for Change: To clarify part numbers of certain items of landing gear equipment.

Description of Change:

Page A-13, APPENDIX I-C, LANDING GEAR EQUIPMENT:

Revise the below items as follows:

| | | | | |
|--------------|----|---------------------------|--------------|----------------|
| <u>From:</u> | "2 | Main Oleo Shock Strut | Cleveland | SK 9729 |
| | 8 | Main Wheel 39 x 13 | Goodyear | 9541333PD860 |
| | 8 | Main Wheel Brake 29 x 13 | Goodyear | 9560393PD860 |
| | 1 | Nose Oleo Shock Strut | Cleveland | SK 9772 |
| | 2 | Nose Wheel 29 x 7.7 | Goodyear | 9541334PD875 |
| | 2 | Nose Wheel Tire 29 x 7.7 | Goodyear | Type VII 12 PR |
| | 2 | Nose Wheel Brake 29 x 7.7 | Goodyear | 9560394PD875" |
| <u>To:</u> | "2 | Main Oleo Shock Strut | Cleveland | |
| | | | Pneum. | 9729 |
| | 8 | Main Wheel 39 x 13 | Goodyear | 9541333 |
| | 8 | Main Wheel Brake 39 x 13 | Goodyear | 9560393 |
| | 1 | Nose Oleo Shock Strut | Cleveland | |
| | | | Pneum. | 9772 |
| | 2 | Nose Wheel 29 x 7.7 | Goodyear | 9541334 |
| | 2 | Nose Wheel Tire 29 x 7.7 | U. S. Rubber | Type VII 12 PR |
| | 2 | Nose Wheel Brake 29 x 7.7 | Goodyear | 9560394" |

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,397 DTD 5 May 1959

CHANGE NO: 295

MODEL 22-1 (Convair "880")

TITLE: Yaw Damper Tester, Deletion of

ORIGIN: Convair initiated, and TWA TWX 5-13 of 12 May 1959

REASON FOR CHANGE: By mutual agreement of TWA and Convair Representatives during conference of 1 May 1959.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| -9.0 lb | -9.0 lb | -2,988 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

J. H. Sharp

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 295

Title: Yaw Damper Tester, Deletion of

Origin: Convair initiated, and TWA TWX 5-13 of 12 May 1959.

Reason for Change: By mutual agreement of TWA and Convair Representatives during conference of 1 May 1959.

Description of Change:

Page A-9, APPENDIX I-C, INSTRUMENTS AND RELATED EQUIPMENT:

Delete the below item under AUTO PILOT (BENDIX (E/P) TYPE PB-20)

"1 Test Adapter, Rate Gyro Eclipse-Pioneer 15251-1-A1"

Effect on Weight Empty: -9.0 pounds
Effect on Balance: -2,988 inch-pounds
Effect on Performance: None

The following shall not appear in the Specification language:

The wiring for the yaw damper tester will be retained in the airplane.

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,401 DTD _____

CHANGE NO: 294

MODEL: 22-1 (Convair "880")

TITLE: Flight Commander's Placard Holder, Installation of


ORIGIN: TWA Letter No. 880S-387, dated 31 March 1959.

REASON FOR CHANGE: Customer request.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| <u>1.0 lb</u> | <u>1.0 lb</u> | <u>300</u> INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

| | |
|---|---|
| * NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES: |  ENGINEERING APPROVAL |
|---|---|

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

FD-200 (Rev. 5-55)

CONVAIR: SD

Hughes Tool Company
Change No. 294

Title: Flight Commander's Placard Holder, Installation of

Origin: TWA Letter No. 880S-387, dated 31 March 1959

Reason for Change: Customer request.

Description of Change:

Page 111, Paragraph 3.19.2.8.10 PLACARDS:

Add the following sentence to the paragraph, after the fourth sentence:

"A Buyer furnished flight commander's placard holder shall be installed on the center of the aft face of flight compartment entry door, at average eye level."

Page A1, APPENDIX I-A, CUSTOMER FURNISHED - CONVAIR INSTALLED

Add the following item under "FURNISHINGS"

"1 Flight Commander's Placard Holder

1-57432"

Effect on Weight Empty: /1.0 pound

Effect on Balance: /300 inch-pounds

Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,396 DTD 8 May 1959

CHANGE NO: 293

MODEL: 22-1 (Convair "880")

TITLE **Periscopic Sextant Mount, Installation of**


ORIGIN: **Customer initiated**

REASON FOR CHANGE: **Customer request**

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|-----------------------------------|-----------------------------------|------------------------|
| GUAR. WT. EMPTY +7.0 lb | OPER. WT. EMPTY +7.0 lb | +2,023 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

| | |
|--|---|
| <p>* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL</p> <p>ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:</p> |  ENGINEERING APPROVAL |
|--|---|

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
|----------------------------|---------------------|

| | |
|---------------------|---|
| SPECIAL PROVISIONS: | <p>EFFECT ON PRICE PER AIRPLANE</p> <p>RECURRING: _____</p> <p>NON-RECURRING: _____</p> <p>TOTAL: _____</p> |
|---------------------|---|

ACCEPTED. _____

BY: _____

DATE: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

CONVAIR: SD

Hughes Tool Company
Change No. 293

Title: Periscopic Sextant Mount, Installation of

Origin: Customer initiated.

Reason for Change: Customer request.

Description of Change:

Page 61 Cont., Add the following new paragraph to the page, after paragraph 3.14.3.11:

"3.14.3.12 PERISCOPIC SEXTANT MOUNT: A periscopic sextant mount, without wiring provisions, shall be installed on the overhead in the pilot's compartment for utilization with ground compass swinging operations. Overhead bumpers shall be installed in the sextant mount area."

Page A-10, APPENDIX I-C, INSTRUMENTS AND RELATED EQUIPMENT:

Add the following item to the Description List:

"1 Mount, Periscopic Sextant Kollsman (P/N to be supplied)

Effect on Weight Empty: 7.0 pounds
Effect on Balance: 2,023 inch-pounds
Effect on Performance: None

C O N V A I R

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,406 DTD _____

CHANGE NO.: 292

MODEL: 22-1 (Convair "880")

TITLE: Ice-Detector Units, Deletion of From No. 2 and No. 4 Pods.

ORIGIN: Convair initiated.

REASON FOR CHANGE: Product improvement.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| -7.0 | -7.0 | - 5,690 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *
None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

B. J. Simons

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

Title: Ice-Detector Units, Deletion of From No. 2 and No. 4 Pods.

Origin: Convair initiated.

Reason for Change: Product improvement.

Description of Change:

Page 125, Paragraph 3.20.2.5 ICE-DETECTOR SYSTEM:

Revise the paragraph to read as follows:

"An ice-detector system shall be installed, with warning lights in the pilot compartment. Two detector units shall be installed; one in the No. 1 pod and one in the No. 3 pod. Automatic control of the airplane anti-icing system shall be provided; operated by either of the ice-detector units. Provisions shall be made for the installation of one ice detector unit in No. 2 pod and one in No. 4 pod."

Page A-2, APPENDIX I-C, POWER PLANT EQUIPMENT:

Revise the below item as follows:

| | | | |
|--------------|--------------------------|---|------------|
| <u>From:</u> | "4 Ice Warning Detectors | Goodyear (Carl type T260-MK12A) | 3065-1802 |
| <u>To:</u> | "2 Ice Warning Detectors | Goodyear (C.A.R.L. Type T260-MK12A) | 3065-1802" |

Effect on Weight Empty: -7.0 pounds
Effect on Balance: -5,690 inch-pounds
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,405 DTD _____

CHANGE NO. 291A

MODEL: 22-1 (Convair "880")

TITLE: Air Conditioning System, Revision to

ORIGIN: Convair initiated.

REASON FOR CHANGE: To prevent possible injection of exhaust gasses into system from other airplanes while on the ground; and revision to CCP No. 291.


| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| -10.0 lb | -10.0 lb | -6,213 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:


 ENGINEERING APPROVAL

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

Title: Air Conditioning System, Revision to

Origin: Convair initiated.

Reason for Change: To prevent possible injection of exhaust gasses into system from other airplanes while on the ground, and revision to CCP No. 291

Description of Change:

Page 126A, FIGURE 3.20-1 AIR CONDITIONING PRESSURIZATION SYSTEM:

Revise above illustration by denoting one of the two fresh air valves in the ground air conditioning system, as not applicable to airplanes 12 through 30.

Effect on Weight Empty: -10.0 pounds
Effect on Balance: -6,213 inch-pounds
Effect on Performance: None

The following shall not appear in the specification language:

The remaining valve on Airplanes 12 through 30 will be modified to suit the subject revision with part number change from 22-02451-1 to 22-02451-3. The part number of this valve on Airplanes 1 through 11 will remain 22-02451-1.

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,398 DTD 6 May 1959

CHANGE NO: 290

MODEL: 22-1 (Convair "880")

TITLE: Settable V₂ Index Pointer for Airspeed Indicator, Installation of

ORIGIN: TWA requested by Letter No. 880-907, dated 27 March 1959, and TWA/CONVAIR Meeting of 28, 29 and 30 April 1959.

REASON FOR CHANGE: Customer request.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | 0 INCH LB. |
| 0 | 0 | |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:
CCP No. 275.

Bf Simons
ENGINEERING APPROVAL

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

BY: _____

DATE: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

Title: Settable V_2 Index Pointer for Airspeed Indicator, Installation of

Origin: TWA requested by Letter No. 880-907, dated 27 March 1959, and TWA/CONVAIR Meeting of 28, 29 and 30 April 1959.

Reason for Change: Customer request.

Description of Change:

Page 56, Paragraph 3.14.1.1 PILOT'S INSTRUMENTS:

Add the following item to the instrument list:

"One settable V_2 index pointer for airpseed indicator"

Page 56, Paragraph 3.14.1.2 COPILOT'S INSTRUMENTS:

Add the following item to the instrument list:

"One settable V_2 index pointer for airspeed indicator"

Page 61A, FIGURE 3.14--1 PILOT'S AND COPILOT'S INSTRUMENT PANELS:

Revise above illustration by adding settable V_2 index pointer for airspeed indicator.

Page A-10, APPENDIX I-C, INSTRUMENTS AND RELATED EQUIPMENT:

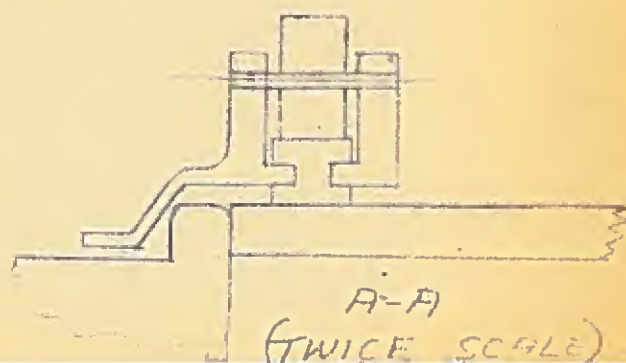
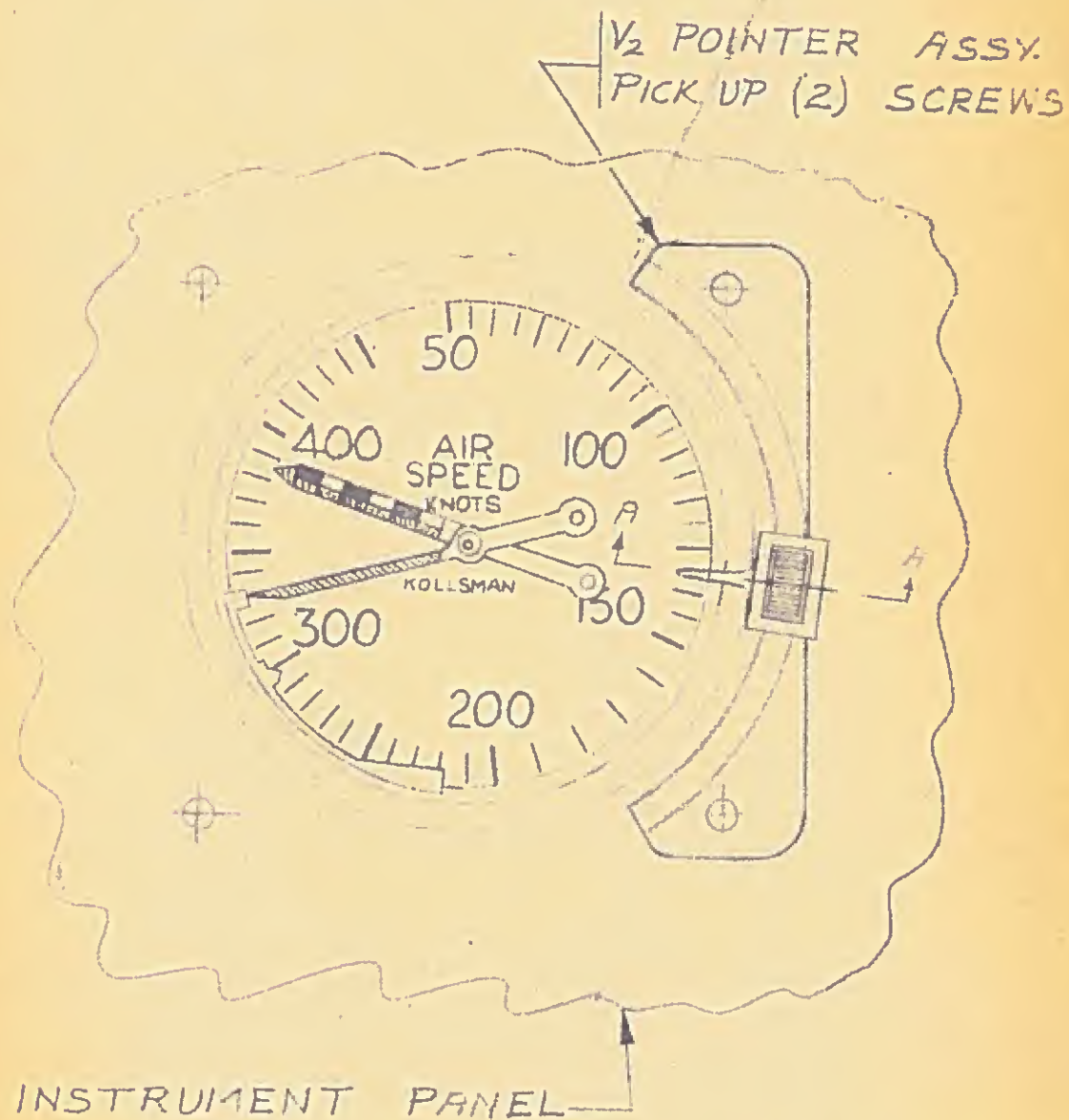
Add the following item to the Description List:

"2 Settable V_2 Index Pointer for
Airspeed Indicator (P/N to be supplied)"

Enclosure: (A) One copy Sketch - AIRSPEED ANGLE OF ATTACK INDICATOR
AND SETTABLE TAKEOFF V_2 POINTER (For information only.)

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

AIRSPEED ANGLE OF ATTACK INDICATOR
&
SETTABLE TAKEOFF V_2 POINTER



CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,400 DTD 12 May 1959

CHANGE NO 289

MODEL: 22-1 (Convair "880")

TITLE: Hydraulic Pump Case Drain Filters, Installation of

ORIGIN: TWA requested by Letter No. 880-944, dated 5 May 1959

REASON FOR CHANGE: Customer request.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|-----------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| <u>10.0 lb</u> | <u>10.0 lb</u> | <u>8,280 INCH LB.</u> |

EFFECT ON GUARANTEED PERFORMANCE: *
None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

B. J. Simon

ENGINEERING APPROVAL

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

Title: Hydraulic Pump Case Drain Filters, Installation of
Origin: TWA requested by Letter No. 880-944, dated 5 May 1959
Reason for Change: Customer request.
Description of Change:

Page 63, Paragraph 3.15.1.10 FILTRATION:

Add the following sentence after the first sentence:

"In addition a filter, with appropriate relief valve setting, shall be installed in each of the four pump case drain lines."

Page 64a, HYDRAULIC SYSTEM No. 1 and Page 64b, HYDRAULIC SYSTEM No. 2:

Above illustrations will be revised to show effects of this proposal.

Page A-11, APPENDIX I-C, HYDRAULIC EQUIPMENT:

Add the following item to the page:

"4 Pump Case Drain Filter, 10-micron, 6 GPM (P/N to be supplied)

Effect on Weight Empty: 10.0 pounds
Effect on Balance: 8.280 inch-pounds
Effect on Performance: None

The following shall not appear in the specification language:

"The filter will be of the disposable paper-element-type similar to AN-6234-3, except modified for use with Skydrol "500" oil. It will be located between the case drain line connection to the bypass restrictor check valve and the check valve in the case drain return line to the reservoir."

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,277 DTD _____

CHANGE NO: 288

MODEL: 22-1 (880)

TITLE: Ramp and Takeoff Weight, Increase of (Revise Ship Effectivity)

ORIGIN: TWA-TWX 880-771A-175 dated 10 October 1958

REASON FOR CHANGE: Customer request.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|-------------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| <u>784.0 lb</u> | <u>784.0 lb</u> | <u>770,331</u> INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *
None

| | |
|--|----------------------|
| <p>* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL</p> <p>ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:</p> | ENGINEERING APPROVAL |
|--|----------------------|

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 288

Title: Ramp and Takeoff Weight, Increase of (Revise Ship Effectivity)

Origin: TWA-TWX 880-771A-175 dated 10 October 1958

Reason for Change: Customer request.

Description of Change:

Page 14, Paragraph 3.1.2.2 LOADING SUMMARY:

P Add weight figures after the following:

"Manufacturer's Weight Empty:
Operating Weight Empty:"

Page 14A SHIP EFFECTIVITY:

Delete the entire page.

Page 19, Paragraph 3.4.1 STRENGTH:

Revise the first four items in the Weights List as follows:

| | | |
|--------------|-----------------------------|-------------|
| <u>From:</u> | "Maximum Taxi Weight (1b) | 180,000** |
| | Maximum Taxi Weight (1b) | 185,000*** |
| | Maximum Takeoff Weight (1b) | 178,500** |
| | Maximum Takeoff Weight (1b) | 184,500**** |
| <u>To:</u> | "Maximum Taxi Weight (1b) | 185,000 |
| | Maximum Takeoff Weight (1b) | 184,500" |

Delete the following asterisk notes at the bottom of the page:

**Effective Customer Airplanes Nos. 1 thru 6.
***Effective Customer Airplanes Nos. 7 thru 30.

Effect on Weight Empty: 484.0 pounds
Effect on Balance: 470,331 inch-pounds
Effect on Performance: None

CONVAIR

COMMERCIAL CHANGE PROPOSAL

SPEC NO. ZD- 22-002

DATE _____

CUSTOMER Hughes Tool Company

MCL 10,391 DTD 18 March 1959

CHANGE NO. 286A

MODEL (880) 22-1

TITLE **Increased Zero Fuel Weight**

ORIGIN. **TWA request during 17 December 1958 meeting.**

REASON FOR CHANGE **To increase allowable total of basic operating weight plus payload, and revision to CCP No. 286.**

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|------------------|-------------------------|
| CLAS. WT. EMPTY | OPER. WT. EMPTY | |
| ✓100.0 lb | ✓100.0 lb | ✓85,600 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* IF FEASIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

J. H. Sharp
ENGINEERING APPROVAL

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---------------------|-------------------------------|
| REVENUE PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

RECEIVED _____ CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY _____

DATE _____

CONVAIR: SD

Hughes Tool Company
Change No. 286A

Title: Increased Zero Fuel Weight

Origin: TWA request during 17 December 1958 meeting.

Reason for Change: To increase allowable total of basic operating weight plus payload, and revision to CCP No. 286.

Description of Change:

Revise the fifth item in the weight list as follows:

From: "Maximum zero fuel weight (lb) 113,000"

To: "Maximum zero fuel weight (lb) 117,000"

Effect on Weight Empty: ~~100.0~~ pounds
Effect on Balance: ~~85,600~~ inch-pounds
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,394 DTD 23 April 1959

CHANGE NO: 285

MODEL: 22-1 (Convair "880")

TITLE Stowage for Gear Down Lock Pins, Relocation of

ORIGIN Requested by TWA Letter No. 880-404, dated 21 April 1959

REASON FOR CHANGE: Customer request.


| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | 0 INCH LB. |
| 0 | 0 | |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:


 ENGINEERING APPROVAL

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

BY _____

DATE _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

CONVAIR: SD

Hughes Tool Company
Change No. 285

Title: Stowage for Gear Down Lock Pins, Relocation of

Origin: Requested by TWA Letter No. 880-404, dated 21 April 1959

Reason for Change: Customer request.

Description of Change:

Page 33, Paragraph 3.8.1.4 LANDING GEAR SAFETY PINS:

Revise the second sentence to read as follows:

"A small pouch shall be provided in the electronic compartment, near the access door, for stowing the three landing gear safety pins."

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

The following shall not appear in the Specification language:

The stowage space of the landing gear safety pins will be at approximately station 273 on right hand side of compartment floor.

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: 11, 1959

CUSTOMER: Hughes Tool Company

MCL 10,390 DTD 21 April 1959 ^{Revised}

CHANGE NO. 284

MODEL: 22-1 (Convair "880")

TITLE Cockpit to Attendant Call System, Revision to

ORIGIN: TWA requested by Letter No. 880-896, dated 6 March 1959, and TWA TWX dated 6 April 1959

REASON FOR CHANGE: Customer request.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|-----------------------------------|-----------------------------------|------------------------|
| GUAR. WT. EMPTY <u>42.0 lb</u> | OPER. WT. EMPTY <u>42.0 lb</u> | <u>41,602</u> INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 284

Title: Cockpit to Attendant Call System, Revision to

Origin: TWA requested by Letter No. 880-896, dated 6 March 1959,
and TWA TWX dated 6 April 1959

Reason for Change: Customer request.

Description of Change:

Page A-14, APPENDIX I-C, FURNISHINGS:

Revise the below item in the Description List as follows:

From: "2 Stewardess Call Chimes Elec. Switch"

To: "2 Stewardess Call Chimes Elec. Ser. Wks. 79920"

Effect on Weight Empty: 2.0 pounds
Effect on Balance: 1,602 inch-pounds
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,341 DTD _____

CHANGE NO: 283

MODEL: 22-1 (Convair "880")

TITLE: **Specification Administrative Change (Revision to Furnishing Items)**

ORIGIN: **Convair initiated.**

REASON FOR CHANGE: **Revision to miscellaneous furnishing items to make compatible with existing arrangement thereof.**

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| 0 | 0 | 0 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

Title: Specification Administrative Change (Revision to Furnishing Items)

Origin: Convair initiated.

Reason for Change: Revision to miscellaneous furnishing items to make compatible with existing arrangement thereof.

Description of Change:

Page 109, Paragraph 3.19.2.2.2 OCCUPIED SIGNS:

Revise the first sentence to read as follows:

"One illuminated, bilingual (English-French) "Occupied-Vacant" sign shall be provided for each lavatory."

Page 111, Paragraph 3.19.2.8.7 CREW LOCKER:

Revise the paragraph title and paragraph to read as follows:

"CREW STOWAGE: Provisions shall be made for stowing of flight crew coats and hats."

Page 111, Paragraph 3.19.2.8.10 PLACARDS:

Revise the first sentence to read as follows:

"The required placards in the flight compartment shall be of the metal-type, and shall be removable."

Page 113, Paragraph 3.19.2.8.15 COFFEE CUP HOLDERS:

Revise the first sentence to read as follows:

"An individual coffee cup holder shall be provided for each crew member, including the observer."

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,339 DTD _____

CHANGE NO: 282

MODEL: 22-1 (Convair "880")

TITLE: Specification Administrative Change (Change AS 2460 to AS 264D)

ORIGIN: Convair initiated

REASON FOR CHANGE: To update cockpit lighting specification

EFFECT ON WEIGHT *

EFFECT ON BALANCE *

GUAR. WT. EMPTY

OPER. WT. EMPTY

0

0

0

INCH LB.

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND
TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON
PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 282

Title: Specification Administrative Change (Change AS 246C to AS 264D)

Origin: Convair initiated

Reason for Change: To update cockpit lighting specification

Description of Change:

Page 74 (Cont), Paragraph 3.16.8.2.2 - INSTRUMENT PANELS:

Change the following in the first sentence:

From: "Aeronautical Standard 246C, revised 12-15-54"

To: "Aeronautical Standard 264D, revised 3-15-56"

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,337 DTD _____

CHANGE NO: 281A

MODEL: 22-1 (Convair "880")

TITLE: Specification Administrative Change (Revision to Essential Power)

ORIGIN: Convair initiated, and TWA Letter 880-972, dated 10 June 1959

REASON FOR CHANGE: To clarify the intent of Paragraph 3.16.17, and revision to CCP No. 281.


| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | 0 INCH LB. |
| 0 | 0 | |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:


 ENGINEERING APPROVAL

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
|----------------------------|---------------------|

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE. |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

Title: Specification Administrative Change (Revision to Essential Power)

Origin: Convair initiated, and TWA Letter 880-972, dated 10 June 1959

Reason for Change: To clarify the intent of Paragraph 3.16.17, and revision to CCP No. 281.

Description of Change:

Page 83, Paragraph 3.16.17 ESSENTIAL POWER:

Under "Flight Controls", delete the second item "(Stabilizer Motor)" and renumber remaining items 1 through 3.

Under "Flight Instruments", revise item 3 as follows:

From: "3. Turn and Slip* (2)"

To: "3. Turn and Slip (Copilot's)"

Revise both items under "Fuel and Oil" as follows:

From: "1. Fuel Booster Pump (4 of 8)
2. Fuel Transfer Pumps (6 of 8)"

To: "1. Fuel Booster Pump and Relay (4 of 8)
2. Fuel Transfer Pump and Relay (6 of 8)"

Page 84, Paragraph 3.16.17 ESSENTIAL POWER:

Under "Lighting", delete the following items, and renumber the remaining items 1 through 10:

- "6. Wing Position
- 7. Tail Position
- 10. Dome Lights****"

Add the following items under "Lighting":

- "11. Landing Light Motors (If Retractable)
- 12. Landing Light Relays"

Under "Power Packs", add the following item:

- "5. Battery Charger****"

Page 85, Paragraph 3.16.17 ESSENTIAL POWER:

Delete both of the following items under "Engine Controls"

- "1. Reverse Thrust Indicator Lights
- 2. Starter Valves"

Delete all three of the following items under "Lighting"

- "1. Landing Light Motors (if Retractable)
2. Landing Light Relays
3. Indicator Lights Dimming Relays"

Delete all three of the following items under "Power"

- "1. Battery Charging*
2. T-R Unit Control Relays
3. T-R Unit Indicator Lights"

Delete the following items under "Fuel and Oil" and renumber remaining items 1 through 4:

- "2. Engine Pump Warning Lights
6. Booster Pump Relays (4)
7. Transfer Pump Relays (4)"

Page 86, Paragraph 3.16.17 ESSENTIAL POWER:

Delete the following "Warning" item

- "Warning - (All on Emergency Except:)
1. Landing Gear Solenoid"

Under "A-C Controls", delete the following item, and change number of item "2" to "1".

- "1. Generator Tie Breakers"

Under "Flight Instruments", revise all three items as follows:

- From:
- "1. Remote Compass (1)
 2. Turn and Slip (2)
 3. Gyro Horizon (2)"

- To:
- "1. Remote Compass* (1)
 2. Turn and Slip (Pilot's)
 3. Gyro Horizon* (2)"

Add the following to the bottom of Page 86:

"*Also on Essential A-C Bus"

Page 87, Paragraph 3.16.17 ESSENTIAL POWER:

Delete the following item under "Lighting" (AC Emergency)

- "3 Dome Lights (Flight Deck)"

Add the following item under "Power Packs"

"5. Battery Charger"

Under "Engine Controls", delete "(None)" and add the following:

- "1. Reverse Thrust Warning
2. Start Valves"

Add the following items under "Lighting" (DC Emergency)

- "2. Flight Deck Dome Lights
3. Wing Position
4. Tail Position
5. Indicator Lights Dimming Relays"

Delete the following item under "Power" and change number of the remaining item to 1.

"1. Battery Charging"

Under "Fuel and Oil", delete "(None)" and add the following item:

"1. Engine Fuel Pump Warning Lights"

Add the following to the bottom of Page 87:

"*Also on Essential A-C Bus"

Page 88, Paragraph 3.16.17 ESSENTIAL POWER:

Add the following item under "Warning"

"6. Landing Gear Solenoid"

Delete the following item under "AC Controls"

"3. Generator Reset Power"

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,395 DTD _____

CHANGE NO.: 280A

MODEL: 22-1 (Convair "880")

TITLE Two High Energy Ignition Systems, Installation of

ORIGIN: Convair initiated

REASON FOR CHANGE: To provide two high energy ignition systems in lieu of one high energy system and one low energy ignition system, and revision to CCP No. 280.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|-------------------------|-------------------------|---------------------|
| GUAR. WT. EMPTY Neg. | OPER. WT. EMPTY Neg. | Neg. INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *
None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

[Handwritten Signature]

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

ENGINEERING APPROVAL

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
|----------------------------|---------------------|

| | |
|---------------------|---|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: RECURRING: _____ NON-RECURRING: _____ TOTAL: _____ |
|---------------------|---|

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 280A

Title: Two High Energy Ignition Systems, Installation of

Origin: Convair initiated

Reason for Change: To provide two high energy ignition systems in lieu of one high energy system and one low energy ignition system, and revision to CCP No. 280.

Description of Change:

Page 54A, ENGINE STARTING SYSTEM:

Replace above illustration in specification with Enclosure (A) which has been revised to reflect the changes of this proposal.

Page 72, Paragraph 3.16.7.4 SEPARATION OF UNITS:

Revise the first sentence to read as follows:

"Electrical units that are operated separately such as fuel pumps and inverters shall not have circuit protectors, switches or wiring common to more than one unit, excluding common portions of ignition systems."

Page 78, Paragraph 3.16.9 IGNITION CONTROL SYSTEM:

Revise the first sentence to read as follows:

"Two high-energy-type ignition systems shall be provided; each shall be separately controlled."

Page 78, Paragraph 3.16.9.1 LOW ENERGY IGNITION SYSTEM:

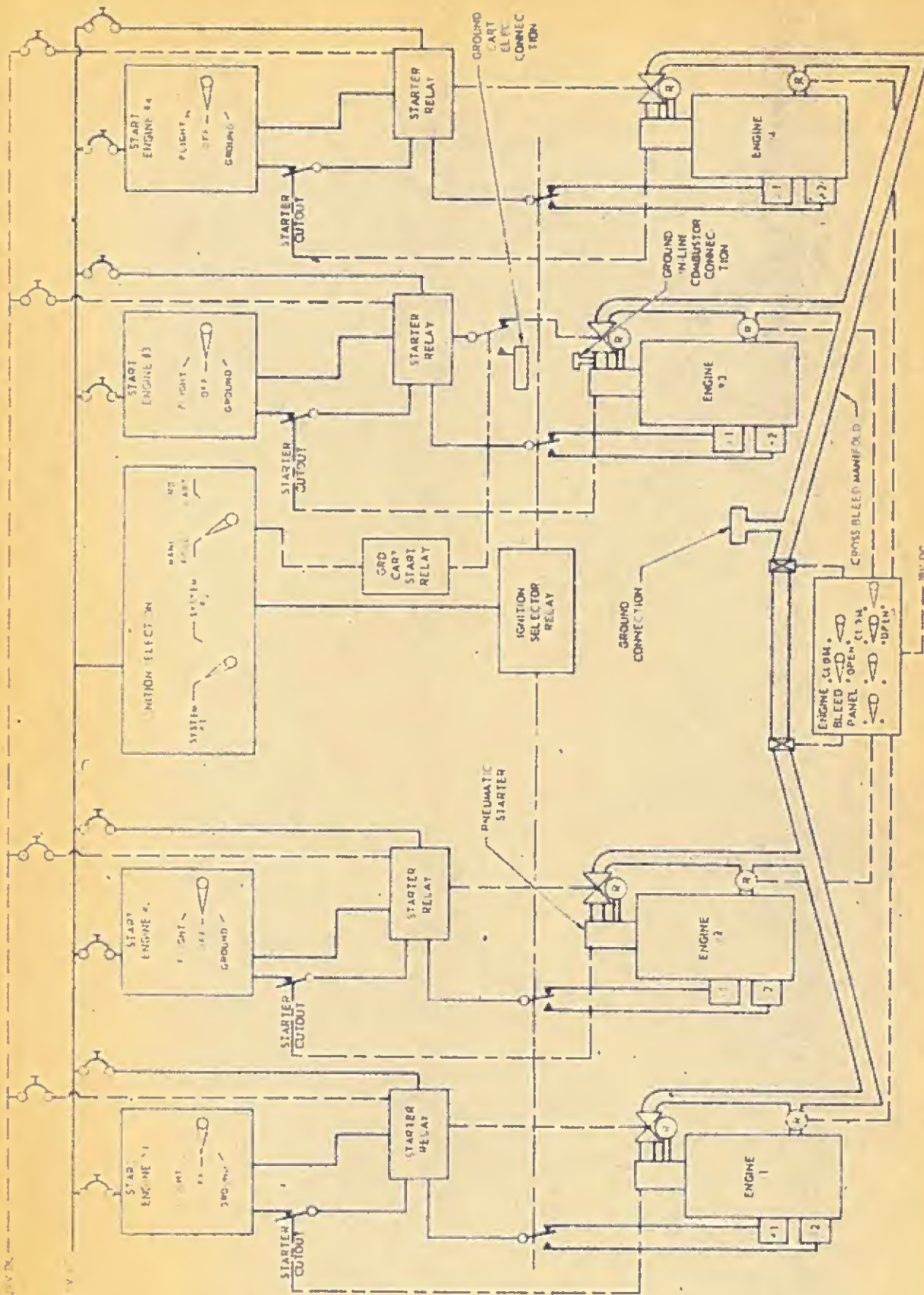
Delete the entire paragraph, including paragraph number and title.

Enclosure: (A) One copy Page 54A - ENGINE STARTING SYSTEM (Revised).

Effect on Weight Empty: Negligible
Effect on Balance: Negligible
Effect on Performance: None

The following shall not appear in the specification language:

This proposal also includes the installation of a neon check light on the pilot's overhead panel adjacent to the ignition switch, which will glow when the energy box selector relay of engine ignition system No. 1 is energized and No. 3 engine selector switch is activated.



ENGINE STARTING SYSTEM
TWA

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,336 DTD _____

CHANGE NO: 279A

MODEL: 22-1 (Convair "880")

TITLE Specification Administrative Change (Passenger Compartment Light Dimming)

ORIGIN: Convair initiated

REASON FOR CHANGE: To clarify the intent of Paragraphs 3.16.8.3.3 and 3.16.8.7; and revision to CCP No. 279

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| 0 | 0 | 0 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

J. H. Sharp

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 279A

Title: Specification Administrative Change (Passenger Compartment
Light Dimming)

Origin: Convair initiated

Reason for Change: To clarify the intent of Paragraphs 3.16.8.3.3 and
3.16.8.7; and revision to CCP No. 279

Description of Change:

Page 76, Paragraph 3.16.8.3.3 - LIGHTING CONTROLS:

Revise the third and fourth sentences as follows:

From: "The general lighting throughout the passenger compartment shall be controlled from the cabin attendant's panel and shall have two degrees of light intensity; dim and full brilliance. The switches shall be down for the dim position, off in the center position and up for full brilliance".

To: "The general lighting throughout the passenger compartment shall be controlled from the cabin attendant panel and shall have light intensity controlled from dim to full brilliance. The switches shall be of the momentary type; and shall be down for the dim position, neutral in the center position and up for full brilliance. An on/off switch shall also be provided".

Page 78, Paragraph 3.16.8.7 - SIDE WINDOW LIGHTING:

Revise the last sentence to read as follows:

"A switch shall be installed on the aft stewardess panel to separate this lighting from the overhead cove lights".

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

C O N V A I R

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,334 DTD _____

CHANGE NO: 277

MODEL: 22-1 (Convair "880")

TITLE: Specification Administrative Change (Deletion of word "trim" from Par. 3.6.3)

ORIGIN: Convair initiated

REASON FOR CHANGE: To clarify the intent of Par. 3.6.3

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| 0 | 0 | 0 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

| | |
|--|---|
| <p>* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL</p> <p>ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:</p> | <p style="text-align: center;">ENGINEERING APPROVAL</p> |
|--|---|

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 277

Title: Specification Administrative Change (Deletion of word "trim"
from Par. 3.6.3)

Origin: Convair initiated

Reason for Change: To clarify the intent of Par. 3.6.3

Description of Change:

Page 24, Paragraph 3.6.3 - ELEVATORS:

In the first line of the last sentence, delete the word "trim".

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

C O N V A I R

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,386 DTD 18 February 1959

CHANGE NO: 278

MODEL: 22-1 (Convair "880")

TITLE: Dual Nose Gear Steering Control, Installation of

ORIGIN: Delta requested and Convair proposed for TWA

REASON FOR CHANGE: To provide nose gear steering control for copilot.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|------------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| <u>49.0 lb</u> | <u>49.0 lb</u> | <u>42,015</u> INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *
None

| | |
|--|----------------------|
| <p>* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL</p> <p>ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:</p> | ENGINEERING APPROVAL |
|--|----------------------|

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 278

Title: Dual Nose Gear Steering Control, Installation of

Origin: Delta requested and Convair proposed for TWA

Reason for Change: To provide nose gear steering control for copilot.

Description of Change:

Page 36, Paragraph 3.8.4.7 STEERING CONTROL:

Revise the fifth and sixth sentences as follows:

From: "A steering wheel located in the pilot's compartment shall be provided and arranged so that the directional sense of control is evident. The steering wheel shall be marked to indicate the neutral position of the nose wheel."

To: "Two steering wheels, one for the pilot and one for the copilot, located in the pilots' compartment shall be provided and arranged so that the directional sense of control is evident. The steering wheels shall be marked to indicate the neutral position of the nose wheel."

Figure 3.14-2 PILOT AND COPILOT CONSOLE:

Revise above illustration by relocating copilot's audio selector panel, copilot's interior lights panel and mike selector panel aft on the console. Show copilot's nose steering wheel, similar to pilot's wheel.

Effect on Weight Empty: 49.0 pounds
Effect on Balance: 42,015 inch-pounds
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,327 DTD _____

CHANGE NO: 276A

MODEL: 22-1 (Convair "880")

TITLE: Stainless Steel Tubing to Wing Center Section, With Exceptions

ORIGIN: Convair initiated, and TWA Letter 880-1068, dated 9-4-59

REASON FOR CHANGE: To clarify intent of Par. 3.12.9.6, and revision to CCP No. 276.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|----------------------------|----------------------------|---------------------|
| GUAR. WT. EMPTY -3.0 lb | OPER. WT. EMPTY -3.0 lb | -2,550 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *
None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

B. J. Simon

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

Title: Stainless Steel Tubing to Wing Center Section, With Exceptions

Origin: Convair initiated, and TWA Letter 880-1068, dated 9-4-59

Reason for Change: To clarify the intent of Par. 3.12.9.6, and revision to CCP No. 276.

Description of Change:

Page 50, Paragraph 3.12.9.6 PIPING AND FITTINGS:

Revise the first sentence as follows:

From: "Fuel lines external to the fuel tanks shall be stainless steel tubing except that lines in the nacelle may be fire-proof, fatigue and abrasion resistant of 5280 aluminum alloy tubing."

To: "Fuel lines external to the fuel tanks and sealed structure wing center section shall be stainless steel tubing except that lines in the nacelle may be fire-proof, fatigue and abrasion resistant flexible hose. Fuel lines within the fuel tanks shall be of 5280 aluminum alloy tubing."

Effect on Weight Empty: -3.0 pounds
Effect on Balance: -2,550 inch-pounds
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,392 DTD 23 March 1959

CHANGE NO: 275

MODEL: 22-1 (Convair "880")

TITLE: Angle of Attack Presentation, Deletion of on Airspeed Indicator

ORIGIN: Delta requested and Convair proposed for TWA

REASON FOR CHANGE: As above

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| -3.0 | -3.0 | -1,269 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

| | |
|--|----------------------|
| <p>* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL</p> <p>ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES: ✓</p> | ENGINEERING APPROVAL |
|--|----------------------|

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

Title: Angle of Attack Presentation, Deletion of on Airspeed Indicator

Origin: Delta requested and Convair proposed for TWA

Reason for Change: As above

Description of Change:

Page 56, Paragraph 3.14.1.1 - PILOT'S INSTRUMENTS:

Revise the fifth item in the instrument list as follows:

From: "One airspeed-angle-of-attack indicator"
To: "One indicator, airspeed"

Page 56, Paragraph 3.14.1.2 - COPILOT'S INSTRUMENTS:

Revise the second item in the instrument list as follows:

From: "One airspeed-angle-of-attack indicator"
To: "One indicator, airspeed"

Page 61A, FIGURE 3.14-1 - PILOT'S AND COPILOT'S INSTRUMENT PANELS:

Revise above illustration by deleting reference to "angle of attack" on two airspeed indicators

Page A-10, APPENDIX I-C, INSTRUMENTS AND RELATED EQUIPMENT:

Revise the second item under "Kollsman Integrated Instrument System" as follows:

| | | | |
|--------------|--|----------|----------------------|
| <u>From:</u> | "2 Airspeed-Angle-of-Attack Indicator" | Kollsman | B25685-10-004" |
| <u>To:</u> | "2 Indicators, Airspeed" | Kollsman | (P/N to be supplied) |

Delete the below item under "Kollsman Integrated Instrument System"

| | | |
|----------------------------------|----------|----------------|
| "1 Transmitter, Angle-of-Attack" | Kollsman | 68-40800-0501" |
|----------------------------------|----------|----------------|

Effect on Weight Empty: -3.0 lbs
Effect on Balance: -1,269 in/lbs
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,332 DTD _____

CHANGE NO: 274C

MODEL: 22-1 (Convair "880")

TITLE: **Specification Administrative Change (Revision to Pilots' Pedestal Switching)**

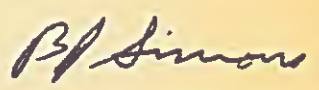
ORIGIN: **Convair initiated, and TWA Letter No. 880-948 dated 11 May 1959**

REASON FOR CHANGE: **To incorporate the above correct switch locations in the illustration page of the specification, and revision to CCP No. 274B.**

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|----------------------|----------------------|---------------------|
| QUAR. WT. EMPTY 0 | OPER. WT. EMPTY 0 | 0 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

| | |
|---|---|
| * NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES: |  ENGINEERING APPROVAL |
|---|---|

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---------------------|---|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: RECURRING: _____ NON-RECURRING: _____ TOTAL: _____ |
|---------------------|---|

ACCEPTED: _____ CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

Title: Specification Administrative Change (Revision to Pilots' Pedestal Switching)

Origin: Convair initiated, and TWA Letter No. 880-948 dated 11 May 1959

Reason for Change: To incorporate the above correct switch locations in the illustration page of the specification, and revision to CCP No. 274B.

Description of Change:

Page 40, Paragraph 3.10.1.5.1 - STABILIZER TRIM CONTROL:

Delete the last two sentences from the paragraph, which read as follows:

"An override switch shall be provided on the pedestal, adjacent to the stabilizer hydraulic cutoff, capable of disconnecting all power to the electric stabilizer trim system. This switch shall be guarded in the "on" position".

Page 80, Add the following new paragraph to the page, after Paragraph 3.16.11.1:

"3.16.11.1.1 SPEED BRAKE SPOILER WARNING HORN: An intermittent warning horn shall be provided to operate under the following conditions:

Condition One, inboard spoiler switch in the normal position:

With the speed brake spoilers extended five degrees or more, advancing any throttle lever beyond approximately the 90 percent RPM position shall cause the warning horn to sound intermittently.

Condition two, inboard spoiler switch in the retract position:

With the airplane airborne, the speed brake spoiler handle may be advanced to any position, irrespective of throttle lever position, and the warning horn will not sound. With the airplane on the ground and the speed brake spoiler extended five degrees or more, advancing any throttle lever beyond approximately the 90 percent position shall cause the warning horn to sound intermittently".

Page 104A, Figure 3.17-1 PILOT'S AND COPILOT'S PEDESTAL:

Revise above illustration as follows:

Change Figure No. from 3.17-1 to 3.¹⁴⁻⁶~~16-4~~.

Relocate stabilizer trim and electrical standby control switches and add inboard spoiler switch; all as shown on Enclosure (A).

- Enclosures: (A) One (1) copy of Figure 3.14-6 PILOT'S AND COPILOT'S PEDESTAL
- (B) Convair Sketch showing labeling of Electric Standby Stabilizer Control and Stabilizer Hyd.
(For information only.)
- (C) Convair Sketch showing labeling of Inboard Spoiler Switch (for information only.)

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

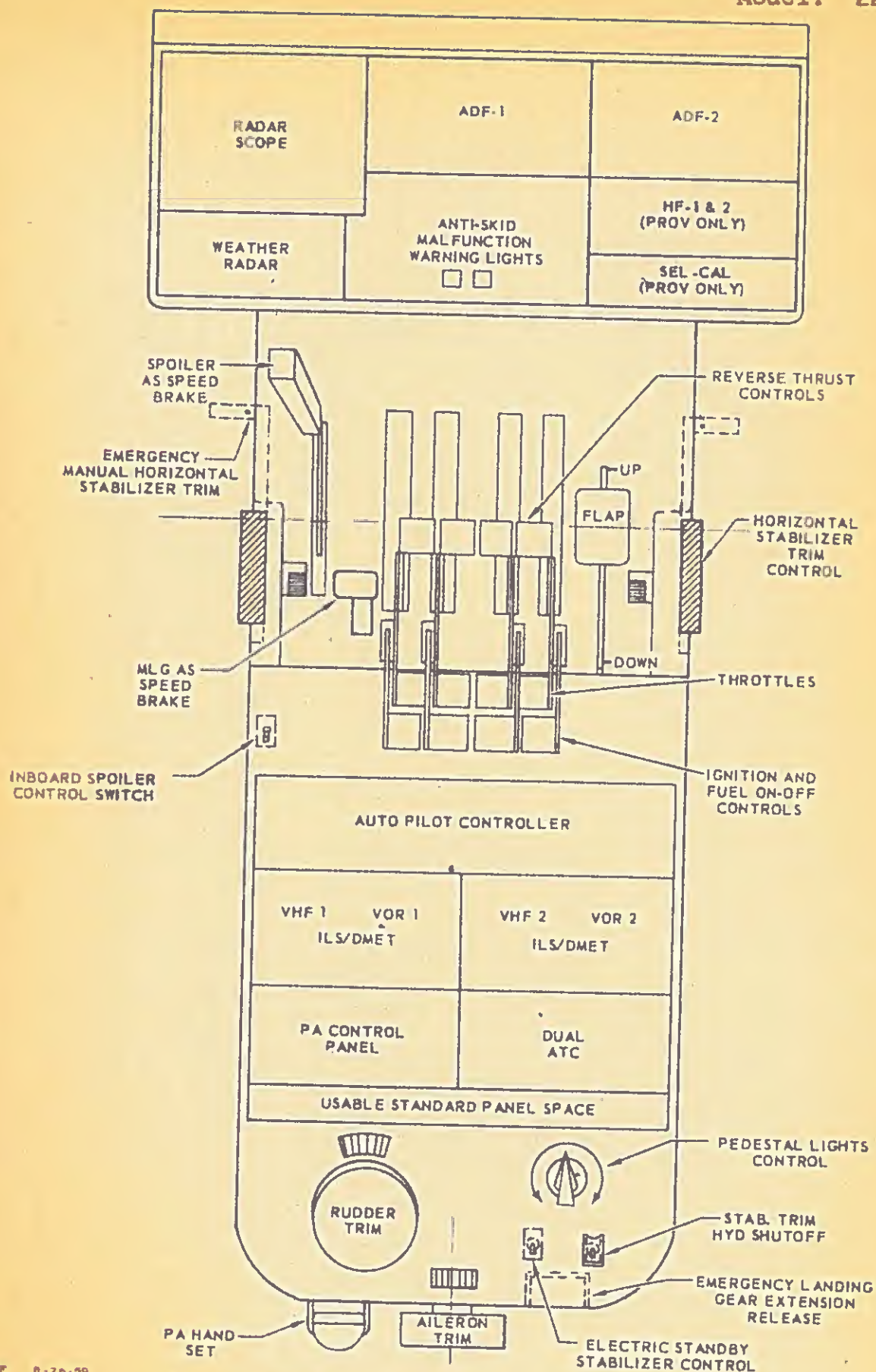
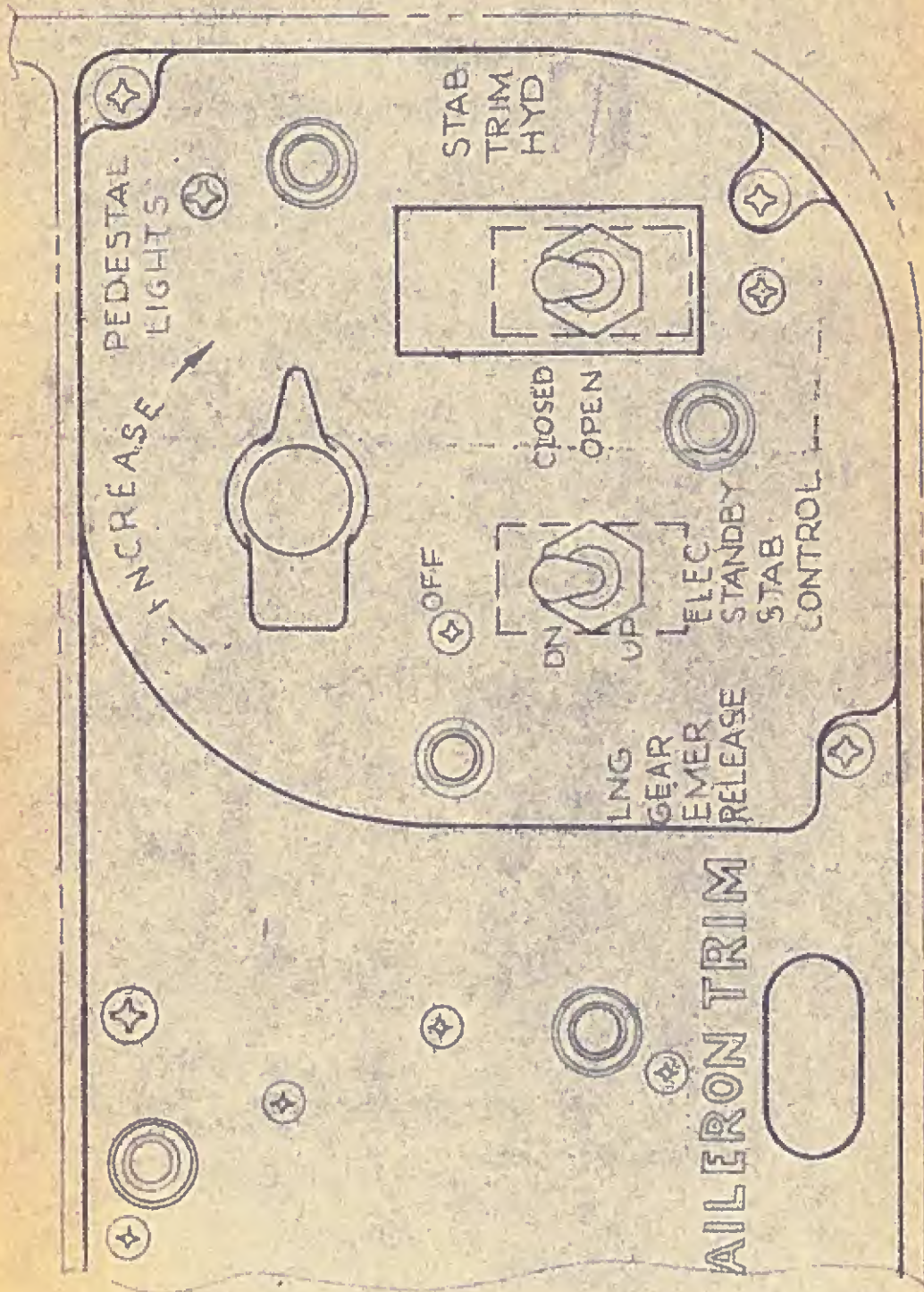
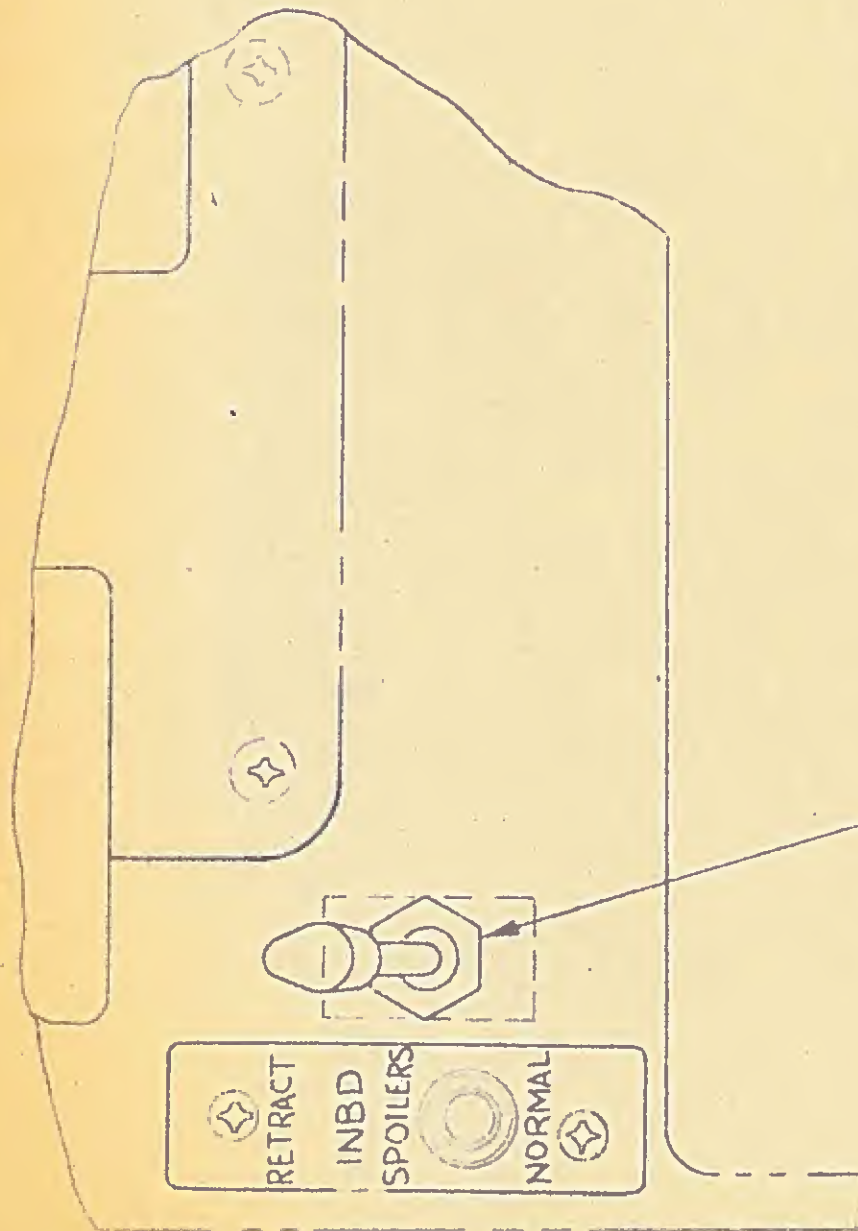

 PILOT'S AND CO-PILOT'S PEDESTAL
 TWA

FIGURE 3.14-6





LEVER-LOCK SWITCH

MS 25125-8

LOCKED IN BOTH POSITIONS
SAME LOCATION AS WAS OCCUPIED
BY YAW DAMPER TEST SW IN
ORDER TO USE PEDESTAL
CASTINGS ALREADY DRILLED

C O N V A I R

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,329 DTD _____

CHANGE NO: 273

MODEL: 22-1 (Convair "880")

TITLE: **Specification Administrative Change (Deletion of downstream fuel screen, and clarify intent of Par. 3.12.9.9.1)**

ORIGIN: **Convair initiated**

REASON FOR CHANGE: 1. To eliminate possibility of fuel flow blockage due to screen icing
2. To clarify the intent of third sentence in Paragraph 3.12.9.9.1

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|----------------------|----------------------|---------------------|
| GUAR. WT. EMPTY 0 | OPER. WT. EMPTY 0 | 0 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: * **None**

| | |
|---|----------------------|
| * NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES: | ENGINEERING APPROVAL |
|---|----------------------|

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
|----------------------------|---------------------|

| | |
|---------------------|---|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: RECURRING: _____ NON-RECURRING: _____ TOTAL: _____ |
|---------------------|---|

ACCEPTED: _____
BY: _____
DATE: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

CONVAIR: SD

Hughes Tool Company
Change No. 273

Page 1 of 1

Title: Specification Administrative Change (Deletion of downstream fuel screen, and clarify intent of Par. 3.12.9.9.1)

Origin: Convair initiated

Reason for Change: 1. To eliminate possibility of fuel flow blockage due to screen icing
2. To clarify intent of third sentence in Paragraph 3.12.9.9.1

Description of Change:

Page 51, Paragraph 3.12.9.8 - STRAINERS AND FILTERS:

Delete the first sentence which reads as follows:

"An 8-10 mesh fuel screen which can be readily drained and serviced shall be installed in the fuel supply downstream of the emergency shutoff valve connection to each engine."

Page 51, Paragraph 3.12.9.9.1 - QUANTITY GAGES:

Revise the third sentence as follows:

From: "The fuel gage units in the tanks shall be provided with disconnect plugs and receptacles and shall be designed to permit installation or replacement without special tools."

To: The fuel gage units in the tanks shall be provided with terminal posts which shall be designed to permit installation or replacement without special tools."

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,369 DTD 6 January 1959

CHANGE NO: 272

MODEL: (880) 22-1

TITLE: Brake Overheat Detector, Installation of

ORIGIN: Requested by TWA Letters, No. 880-788 dated 30 October 1958, and 880-849 dated 31 October 1958

REASON FOR CHANGE: Customer request.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|-----------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| <u>16.0 lb</u> | <u>16.0 lb</u> | <u>9,590</u> INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *
None

| | |
|---|----------------------|
| * NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL | |
| ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES: | |
| | ENGINEERING APPROVAL |

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 272

Title: Brake Overheat Detectors, Installation of

Origin: Requested by TWA Letters No. 880-788 dated 30 October 1958,
and 880-849 dated 31 October 1959

Reason for Change: Customer request.

Description of Change:

Page 34, Add the following new paragraph after Paragraph 3.8.2.2.1:

"3.8.2.2.2 BRAKE OVERHEAT DETECTORS: A brake overheat detection system consisting of the following shall be installed:

- a. One heat detector element on each main and nose wheel inner axle in wheel drum area.
- b. Indicator warning light and test switch on fire control panel.
- c. Two control units in electrical rack, two control units in main wheel well and one control unit in nose section under floor.
- d. Two circuit breakers on circuit breaker panel.
- e. All required wiring and nameplates."

Effect on Weight Empty: 16.0 pounds
Effect on Balance: 19,590 inch-pounds
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,328 DTD _____

CHANGE NO.: 271

MODEL: (880) 22-1

TITLE: Specification Administrative Change (Add Flight Crew Shoulder Harness Inertia Reels to Equipment List and Misc. Corrections)

ORIGIN: TWA Letter 880-885 dated 18 February 1959

REASON FOR CHANGE: Specification Clarification

EFFECT ON WEIGHT *

EFFECT ON BALANCE *

GUAR. WT. EMPTY

OPER. WT. EMPTY

0

0

0

INCH LB.

EFFECT ON GUARANTEED PERFORMANCE: *

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

Title: Specification Administrative Change (Add Flight Crew Shoulder Harness Inertia Reels to Equipment List and Misc. Corrections)

Origin: TWA letter 880-885 dated 18 February 1959

Reason for Change: Specification Clarification

Description of Change:

Page 2A, Figure 1-1 GENERAL ARRANGEMENT:

Revise above figure to reflect correct height-overall dimension

Page 15, Paragraph 3.1.3.3 BODY:

Revise the fourth item as follows:

| | | |
|--------------|----------------|----------|
| <u>From:</u> | Height-overall | 36' 0.3" |
| <u>To:</u> | Height-overall | 36' 3.7" |

Page A-14, APPENDIX I-C FURNISHINGS:

Change the following items in the equipment list:

| | | | |
|--------------|---|--------------------|-----------|
| <u>From:</u> | 2 Pilot's Safety Belt and Shoulder Harness | | |
| | 1 Flight Engineer's Safety Belt and Shoulder Harness | | |
| | 2 Stewardess Safety Belt and Shoulder Harness | | |
| <u>To:</u> | 2 Pilot's Safety Belt and Inertia Reels Including Shoulder Harness | Pacific Scientific | 0101145-0 |
| | 1 Flight Engineer's Safety Belt and Inertia Reel Including Shoulder Harness | Pacific Scientific | 0101146-0 |
| | 3 Stewardess' Safety Belt and Shoulder Harness | | |

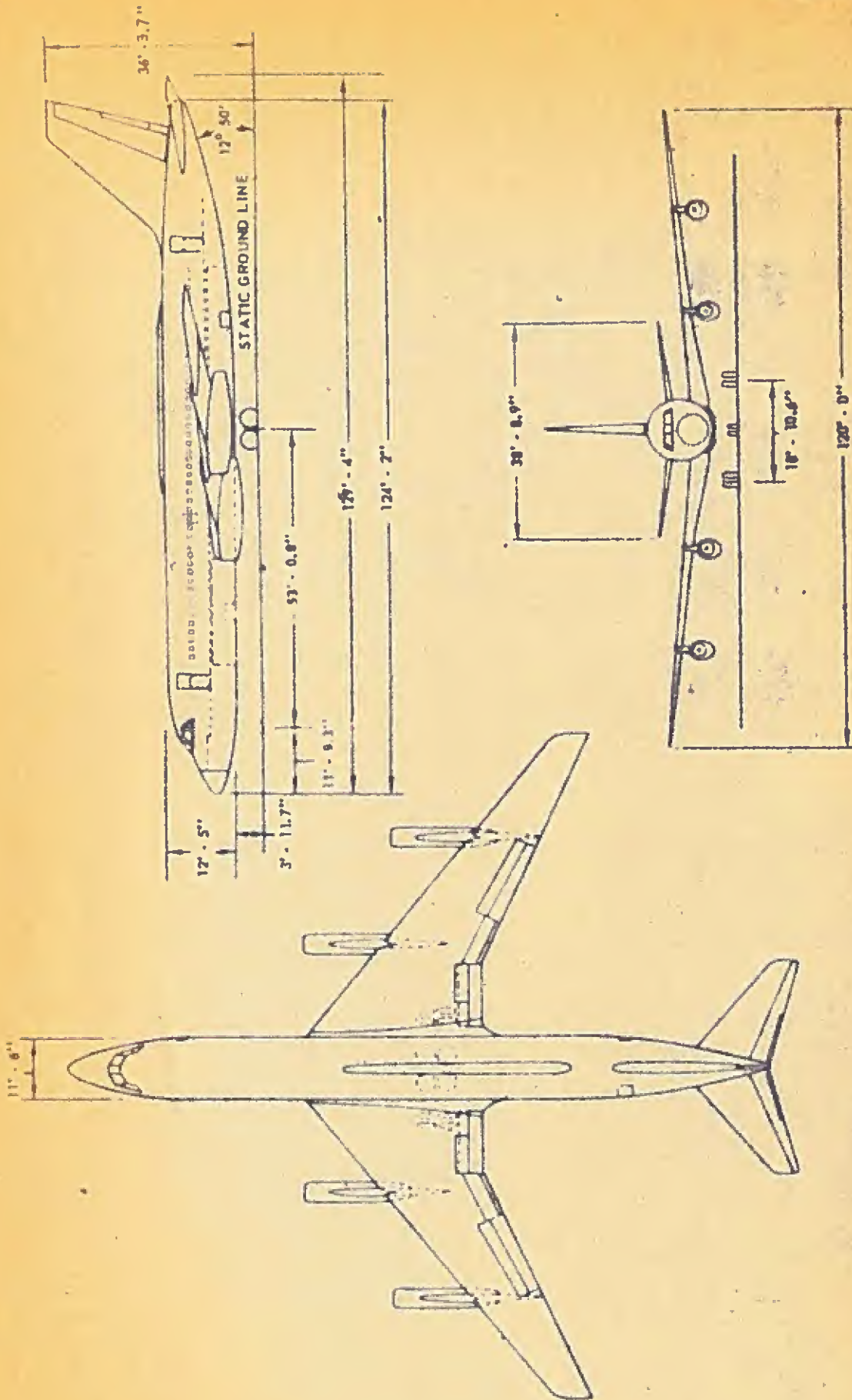
Add the following items to the equipment list:

1 Observer's Seat

1 Observer's Safety Belt
and Shoulder Harness

Enclosure: (A) one (1) copy of Figure 1-1 GENERAL ARRANGEMENT:

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None



GENERAL ARRANGEMENT
TWA

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,387 DTD Revised 25 September 1959

CHANGE NO: 270A

MODEL: (880) 22-1

TITLE: **Fifth Seat in Cockpit, Installation of**


ORIGIN: **Delta requested and Convair proposed for TWA**

REASON FOR CHANGE: **As above, and revision to CCP No. 270**

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|--------------------------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | INCH LB. |
| See weight | breakdown at end of CCP | |

EFFECT ON GUARANTEED PERFORMANCE: *

None

| | |
|---|--|
| <p>* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL</p> <p>ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:</p> <p style="text-align: center;">CCP No. 261A</p> |  ENGINEERING APPROVAL |
|---|--|

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

BY: _____

DATE: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

CONVAIR, S.D. 8-1217A

Page 105, Add the following new paragraph, after Paragraph 3.19.1.1.2:

"3.19.1.1.2.1 - FIFTH COCKPIT SEAT: A folding-type, slide-out seat, mounted on removable tracks, shall be installed aft of the observer for use by a fifth flight compartment member".

Page 106, Paragraph 3.19.1.1.6 - SAFETY BELTS:

Revise the second sentence as follows:

From: "In addition, each crew member's (including observer's) and cabin attendants' seats shall be equipped with shoulder harnesses".

To: In addition, each crew member's (including observer's and fifth cockpit occupant's) and cabin attendants' seats shall be equipped with shoulder harnesses".

Page 117, Paragraph 3.19.5.1 - GENERAL:

Revise the first sentence to read as follows:

"A high pressure gas-type oxygen system shall be installed for use of the operating crew (pilot, copilot and flight engineer) passengers, non-operating crew (observer, fifth cockpit occupant and cabin attendants') and in each lavatory".

Page 118, Paragraph 3.19.5.4 - INDIVIDUAL OUTLETS:

Revise the first sentence to read as follows:

Oxygen outlets shall be located at the flight crew stations, at flight observer station, at fifth cockpit occupant's station, and at all passenger seats and cabin attendant's stations for a coach configuration".

Page 122, Paragraph 3.20.1.8 - OCCUPIED COMPARTMENTS:

Revise the paragraph to read as follows:

Individual adjustable air outlets shall be installed as follows: One for the pilot, one for the copilot, one for the flight engineer, one for each passenger seat, one for each lavatory and two in each buffet area".

Title: Fifth Seat in Cockpit, Installation of

Origin: Delta requested and Convair proposed for TWA

Reason for Change: As above, and revision to CCP No. 270

Description of Change:

Page 27, Paragraph 3.7.1.3.1 - FLIGHT COMPARTMENT:

Revise the paragraph to read as follows:

"The pilots' compartment shall be arranged with the pilot on the left side, the copilot on the right side and a control pedestal between. An observer's seat shall be provided aft of the pilot. A flight engineer's station shall be provided aft of the copilot's station, and a fifth seat shall be installed on lateral tracks, to fold and stow, aft of the observer's seat. The "use" position of the fifth seat shall be in front of the flight compartment door".

Page 99, Paragraph 3.17.2.3.5 - SERVICE INTERPHONE:

Add the following interphone location

"15 Fifth Cockpit Member (headset only)"

Page 99, Paragraph 3.17.2.3.5.1 - JACKS AND JACKBOXES:

Revise the second sentence to read as follows:

"Jacks for the microphones and headsets shall be provided at locations 1, 2, 3 and 4. A jack for headset shall be provided at location 15 and shall be wired in parallel with the pilot's headset jack".

Page 99, Paragraph 3.17.2.3.5.3 - MICROPHONES, HEADSETS AND HANDSETS:

Revise the first sentence to read as follows:

"Microphones, headsets and hooks shall be installed at locations 1,2,3,4 and 5. A headset and hook only shall be provided at location 15".

Page 100, Paragraph 3.17.2.3.6 - SMOKE MASK MICROPHONE:

Revise the third sentence as follows:

From: "Switches for other crew members shall be located conveniently at their respective stations".

To: "The switches for the flight engineer and observer shall be located conveniently at their stations".

Page A-6, APPENDIX I-C, ELECTRONIC EQUIPMENT:

Revise the below items under "INTERPHONE SYSTEM (FLIGHT)" as follows:

| | | | | |
|--------------|----|-------------|-------------|---------|
| <u>From:</u> | "4 | Microphones | Telephonics | 10065-2 |
| | 4 | Headphones | Telephonics | TC149G" |
| <u>To:</u> | "5 | Microphones | Telephonics | 10065-2 |
| | 6 | Headphones | Telephonics | TC149G" |

Page A-7, APPENDIX I-C, ELECTRONIC EQUIPMENT:

Revise the below item under "CONTROL PANELS" as follows:

| | | | | |
|--------------|----|----------------------|--------|--------|
| <u>From:</u> | "4 | Audio Selector Panel | Gables | G-551" |
| <u>To:</u> | "5 | Audio Selector Panel | Gables | G-551" |

Page A-14, APPENDIX I-C, FURNISHINGS:

Add the following item to the Description List:

| | | |
|----|--|------|
| "1 | Seat, Fifth Cockpit Member, Folding (including fabric, belt and harness)" | 57.0 |
|----|--|------|

The below listed illustrations will be revised to show effects of fifth cockpit member station, on Customer acceptance of this proposal:

- Figure 1-2 - Standard Seating Arrangement
- Figure 3.19-4 - Gaseous Oxygen System
- Appendix II, Figure 1 - Alternate Seating Arrangement.

Enclosure: (A) One copy of Convair Dwg - Crew Seat #5 - Installation, Mock-Up Cockpit Area. (For information only)

| | Weight | Effect on Balance |
|------------------------------------|------------|--------------------|
| Effect on Guaranteed Weight Empty: | +83.0 Lbs | +24,063 Inch - Lbs |
| Effect on Fixed Useful Load: | +209.0 Lbs | +64,690 Inch - Lbs |
| Effect on Operating Weight Empty: | +292.0 Lbs | +88,753 Inch - Lbs |
| Effect on Performance: | None | |

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,330 DTD _____

CHANGE NO: 269

MODEL: 22-1 (Convair "880")

TITLE: Specification Administrative Change (Oxygen System, Clarification of)

ORIGIN: Convair initiated

REASON FOR CHANGE: To incorporate an oxygen system revision into the specification consistent with CCP No. 170 (Cabin Interior Modification and Installation of 12-Place Club Area)

EFFECT ON WEIGHT *

EFFECT ON BALANCE *

GUAR. WT. EMPTY

OPER. WT. EMPTY

0

0

0

INCH LB.

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

B J Simon
ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR 10-1017A

Title: Specification Administrative Change (Oxygen System, Clarification of)

Origin: Convair initiated

Reason for Change: To incorporate an oxygen system revision into the specification consistent with CCP No. 170 (Cabin Interior Modification and Installation of 12-Place Club Area)

Description of Change:

Page 118, Paragraph 3.19.5.4 - INDIVIDUAL OUTLETS:

Revise the second sentence to read as follows:

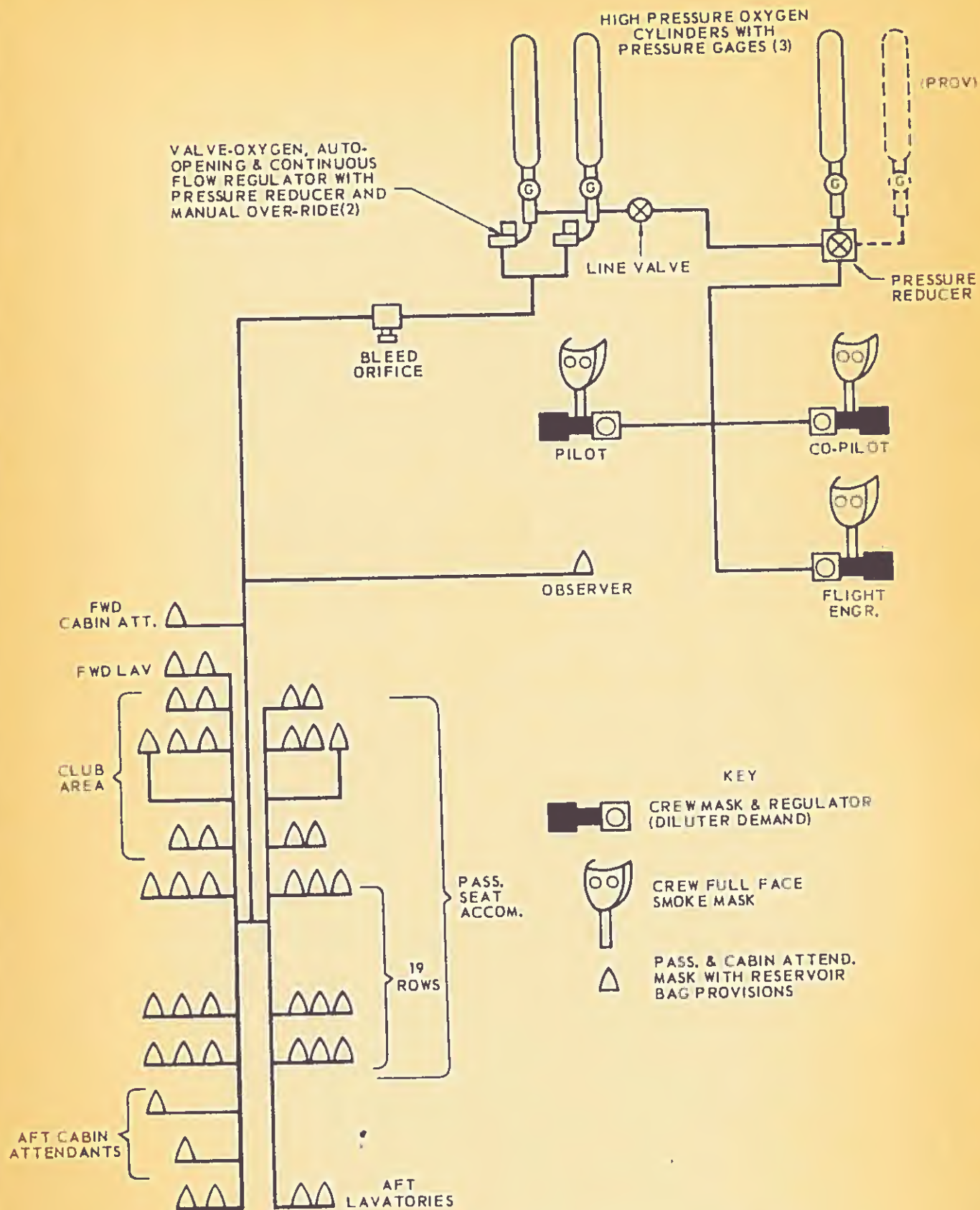
Provisions for one additional mask shall be made for each seat row in the main cabin area (three masks for each of the 19 rows on both sides of the airplane) to provide for emergency oxygen for children in arms. The oxygen outlet system for the club area shall be as shown on Figure 3.19-4

Figure 3.19-4 - GASEOUS OXYGEN SYSTEM:

Above figure will be replaced in the specification with Enclosure (A) on Customer approval of this CCP.

Enclosure: (A) One copy of Figure 3.19-4 - GASEOUS OXYGEN SYSTEM (Revised)

Effect on Weight Empty 0
Effect on Balance 0
Effect on Performance: None



GASEOUS OXYGEN SYSTEM
 TWA

Figure 3.19-4

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,389 DTD 19 February 1959

CHANGE NO: 268

MODEL: (880) 22-1

TITLE Flight Recorder, Installation of

ORIGIN: TWA requested by Letter No. 880-881, dated 16 February 1959

REASON FOR CHANGE: Customer request.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|-------------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| <u>732.0 lb</u> | <u>732.0 lb</u> | <u>731,680</u> INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

| | |
|--|----------------------|
| <p>* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL</p> <p>ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:</p> | ENGINEERING APPROVAL |
|--|----------------------|

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS. | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 268

Title: Flight Recorder, Installation of

Origin: TWA requested by Letter No. 880-881, dated 16 February 1959

Reason for Change: Customer request.

Description of Change:

Page 61, Paragraph 3.14.3.8 FLIGHT DATA RECORDING PROVISIONS:

Revise the paragraph title and the paragraph to read as follows:

"FLIGHT DATA RECORDER: A Lockheed Air Service Flight Recorder No. 4001550 Model C and Amplifier No. 4001551 shall be installed, with the necessary wiring, static and pitot lines, in the hydraulic compartment."

Page A-10, APPENDIX I-C, INSTRUMENTS AND RELATED EQUIPMENT:

Add the following item to the page:

"FLIGHT DATA RECORDER

| | | |
|-----------------|----------------------|--------------------|
| Flight Recorder | Lockheed Air Service | 4001550 Model C |
| Amplifier | Lockheed Air Service | 4001551 |

FIGURE 3.17-2, PITOT STATIC SYSTEM SCHEMATIC

Revise above illustration to show connections to Flight Recorder.

| | |
|-------------------------|---------------------|
| Effect on Weight Empty: | 432.0 pounds |
| Effect on Balance: | 431,680 inch-pounds |
| Effect on Performance: | None |

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,382 DTD 13 February 1959

CHANGE NO: 267

MODEL: (880) 22-1

TITLE: VOR Receiver, 51R-3 Modified, Installation of

ORIGIN: TWA requested by Letter No. 8808-354, dated 5 February 1959

REASON FOR CHANGE: Customer request.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--|-----------------|-------------------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | 0 INCH LB. |
| 0 | 0 | |
| EFFECT ON GUARANTEED PERFORMANCE: * | | |
| None | | |
| <p>* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL</p> <p>ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:</p> | | ENGINEERING APPROVAL |
| LATEST DATE-OF ACCEPTANCE: | | AIRPLANES AFFECTED: |
| SPECIAL PROVISIONS: | | EFFECT ON PRICE PER AIRPLANE: |
| | | RECURRING: _____ |
| | | NON-RECURRING: _____ |
| | | TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 267

Title: VOR Receiver, 51R-3 Modified, Installation of

Origin: TWA requested by Letter No. 8808-354, dated 5 February 1959

Reason for Change: Customer request.

Description of Change:

This proposal has no effect on Specification language, which provides for the installation of a VOR receiver, 51R-3 Modified, incorporating "H" change in Drawing 1-49724 in lieu of "G" change.

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

C O N V A I R

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,385 DTD _____

CHANGE NO: 265

MODEL: (880) 22-1

TITLE: **Mach and Airspeed "Never Exceed" Warning System, Installation of**

ORIGIN: **Convair initiated (Article 5, Par. (e) of Purchase Agreement)**

REASON FOR CHANGE: **FAA requirement for certification of the airplane**

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|------------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| +6.0 lb | +6.0 lb | +1,803 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

(100) PAT. (100) (100) (100)

Title: Mach and Airspeed "Never Exceed" Warning System, Installation of

Origin: Convair initiated (Article 5, Par (e) of Purchase Agreement)

Reason for Change: FAA requirement for certification of the airplane

Page 61, Add following new paragraph after Paragraph 3.14.3.10:

"3.14.3.11 MACH AND AIRSPEED WARNING SYSTEM: A Mach and indicated airspeed "NEVER EXCEED" warning system consisting of the following shall be installed:

- a. A momentary switch on pilot's instrument panel adjacent to and outboard of the airspeed indicator. The switch shall be labeled "VNE-MNE WARN TEST".
- b. A warning bell in the flight compartment.
- c. One interrupter and one Mach/indicated airspeed switch in the electrical compartment area.
- d. The necessary wiring, and a circuit breaker (emergency d-c bus) on circuit breaker panel".

Page 61A, Figure 3.14-1 PILOT'S AND COPILOT'S INSTRUMENT PANELS:

Revise above illustration to show Mach/airspeed warning test switch.

Page 88, Paragraph 3.16.17 ESSENTIAL POWER:

Under "D-C Emergency," add the following item to the Warning list:

"6. Mach/Airspeed Warning System"

Page 104B, FIGURE 3.17-2 PITOT STATIC SYSTEM SCHEMATIC:

Revise above illustration to show connection for the Mach/airspeed warning system.

Page A-10, APPENDIX I-C, INSTRUMENTS AND RELATED EQUIPMENT:

Add the following to the page:

"MACH/AIRSPEED WARNING SYSTEM

1 Warning Bell
1 Mach/Airspeed Switch
1 Interrupter

| | |
|------------------|------------|
| Edwards | 168-2C |
| Pioneer Central | Type 31000 |
| Radar Relay Inc. | R-1487" |

Effect on Weight Empty: +6.0 lbs
Effect on Balance: +1,803 Inch-lbs
Effect on Performance: None

C O N V A I R

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,381 DTD 12 February 1959

CHANGE NO: 264

MODEL: (880) 22-1

TITLE: Scotchcol Exterior Markings

ORIGIN: Requested by TWA Letter No. 880-840, dated 15 December, 1958

REASON FOR CHANGE: Customer request.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| 0 | 0 | 0 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

| | |
|--|---|
| <p>* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL</p> <p>ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:</p> | <p style="text-align: center;">ENGINEERING APPROVAL</p> |
|--|---|

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
|----------------------------|---------------------|

| | |
|---------------------|--|
| SPECIAL PROVISIONS: | <p>EFFECT ON PRICE PER AIRPLANE:</p> <p>RECURRING: _____</p> <p>NON-RECURRING: _____</p> <p>TOTAL: _____</p> |
|---------------------|--|

ACCEPTED: _____ CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 264

Title: Scotchcal Exterior Markings

Origin: Requested by TWA Letter No. 880-840, dated 15 December 1958

Reason for Change: Customer request.

Description of Change:

This proposal has no effect on the Specification language.

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

The following shall not appear in the Specification language:

The Scotchcal markings will consist of the following:

- a. "TWA" on wings, right and left hand sides, 40 inches high.
- b. "TWA" on fuselage adjacent to forward main entrance and service doors, 24 inches high.
- c. "TWA" on vertical stabilizer, 48 inches high.
- d. Registration letters on vertical stabilizer, 12 inches high.
- e. "Convair 880" adjacent to aft main entrance and service doors.
- f. American flag on vertical stabilizer.
- g. TWA fleet numbers, five inches high.

These Scotchcals will be in accordance with Minnesota Mining Mfg. Co., No. 3650 Series Scotchcal (pressure-sensitive-type) conforming to Specification MIL-D-8634A.

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
10000 WILSON AVENUE, DETROIT, MICHIGAN 48202

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL. 10,324 DTD _____

CHANGE NO: 263

MODEL: (880) 22-1

TITLE **Specification Administrative Change (Machine countersink in attachments to supports.)**

ORIGIN **Convair initiated.**

REASON FOR CHANGE: **To provide an alternate method to insure flushness.**

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| 0 | 0 | 0 INCH LBS. |

EFFECT ON GUARANTEED PERFORMANCE **None**

| | |
|--|----------------------|
| * NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES | ENGINEERING APPROVAL |
|--|----------------------|

| | |
|---------------------------|--------------------|
| LATEST DATE OF ACCEPTANCE | AIRPLANES AFFECTED |
|---------------------------|--------------------|

| | |
|---------------------|---|
| SPECIAL PROVISIONS. | EFFECT ON PRICE PER AIRPLANE RECURRING _____ NON-RECURRING _____ TOTAL _____ |
|---------------------|---|

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORPORATION

BY _____

DATE _____

CONVAIR: SL

Hughes Tool Company
Change No. 263

Title: Specification Administrative Change (Machine countersink in attachments to supports.)

Origin: Convair initiated.

Reason for Change: To provide an alternate method to insure flushness.

Description of Change:

Page 31, Paragraph 3.7.1.6.5 CARGO COMPARTMENT FLOORING:

Revise the last sentence as follows:

From: "Attachments to transverse or longitudinal supports shall employ extra depth dimples to insure flushness."

To: "Attachments to transverse or longitudinal supports shall employ extra depth dimples or machine countersinking to insure flushness."

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

DATE: _____

MCL 10,379 DTD 27 January 1959

MODEL: (880) 22-1

DATE: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

CONVAIR: SD

Hughes Tool Company
Change No. 262

Title: Airspeed Angle of Attack Indicator, Change of

Origin: Telecon of 27 January 1959 between Mr. White of TWA and Mr. Parsons of Convair.

Reason for Change: Customer request.

Description of Change:

Page A-10, APPENDIX I-C, INSTRUMENTS AND RELATED EQUIPMENT:

Revise the second item in Description List as follows:

From: "2 Airspeed Angle-of-Attack Indicator Kollsman B25685-10-004

To: "2 Airspeed Angle-of-Attack Indicator Kollsman (P/N to be supplied)"

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

The following shall not appear in the Specification language:

The new indicator will be similar to Kollsman B25685-10-002 used on Boeing 707 airplanes except range and limit markings will be altered to conform to the Convair 880 airplane.

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,376 DTD Rev. 21 April 1959

CHANGE NO: 261A

MODEL: (880) 22-1

TITLE: **Crew Member Facilities at Observer's Station, Installation of**

ORIGIN: **TWA/CONVAIR Meeting at San Diego on 21-23 January 1959, and
TWA Letter No. 880-929, dated 16 April 1959**

REASON FOR CHANGE: **Customer request.**

EFFECT ON WEIGHT *

EFFECT ON BALANCE *

GUAR. WT. EMPTY

OPER. WT. EMPTY

+19.0 lb

+19.0 lb

+4,822

INCH LB.

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND
TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON
PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

J. H. H. H.

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

Title: Crew Member Facilities at Observer's Station, Installation of
Origin: TWA/CONVAIR Meeting at San Diego on 21-23 January 1959, and TWA
Letter No. 880-929, dated 16 April 1959

Reason for Change: Customer request.

Description of Change:

Page 98, Paragraph 3.17.2.3.1 - AUDIO SELECTOR:

Revise the first sentence to read as follows:

"Audio selector panels shall be provided for the pilot, copilot, flight engineer and the observer."

Page 99, Paragraph 3.17.2.5.1 - JACKS AND JACKBOXES:

Revise the paragraph to read as follows:

"Microphone, headphone and handset jacks shall be provided at locations 5, 6, 9, 10, 11, 12, 13 and 14. Jacks for the microphones and headsets shall be provided at locations 1, 2, 3 and 4. All jacks shall be permanently labeled."

Page 99, Paragraph 3.17.2.3.5.3 - MICROPHONES, HEADSETS AND HANDSETS:

Revise the first sentence as follows:

From: "Microphones, headsets and hooks shall be installed at locations 1, 2, 3 and 5."

To: "Microphones, headsets and hooks shall be installed at locations 1, 2, 3, 4, and 5."

Page 113, Paragraph 3.19.2.8.15 - COFFEE CUP HOLDERS:

Revise the first sentence as follows:

From: "Individual coffee cup holders shall be provided for each crew member except observer."

To: "Individual coffee cup holders shall be provided for each crew member and the observer."

Page 118, Paragraph 3.19.5.5 - MASKS:

Revise the paragraph to read as follows:

"Provisions shall be made for stowing three crew supplemental masks and one observer's supplemental mask in the flight station. Provisions shall be made for stowing passenger supplemental masks where

one will be accessible for installation and use by each passenger within 15 seconds. The flight crew and observer system shall be so arranged that the masks can be continuously plugged in and available for immediate use. A Scottoramic protective mask shall be installed and connected to one side of the tee outlet at each flight crew station. A supplemental mask shall be provided for each cockpit station (including observer's station) and shall be stowed accessible to the station with the occupant of the station in his normal seated position. Passenger masks shall be Puritan No. 1040 disposable-type, or equivalent.

Page 118D, FIGURE 3.19-4 GASEOUS OXYGEN SYSTEM:

Above figure will be revised to include observer in crew oxygen supply system, less smoke mask.

Page A-18, APPENDIX I-C, OXYGEN EQUIPMENT:

Revise the below items in the Description List as follows:

| | | | |
|--------------|--|-------------|----------|
| <u>From:</u> | "3 Regulators (Crew Diluter-Demand-Type) | Ard Equipt. | 14950-2" |
| <u>To:</u> | "4 Regulators (Crew and Observer Diluter-Demand-Type) | Ard Equipt. | 14950-8" |
| <u>From:</u> | "3 Oxygen Mask Assembly (Crew Supplemental) | Puritan | 114020" |
| <u>To:</u> | "4 Oxygen Mask Assembly (Crew and Observer Supplemental) | Puritan | 114020" |

| | |
|-------------------------|--------------------|
| Effect on Weight Empty: | +19.0 pounds |
| Effect on Balance: | +4,822 inch-pounds |
| Effect on Performance: | None |

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,375 DTD 27 January 1959

CHANGE NO: 260

MODEL: (880) 22-1

TITLE: Sliding Glass Holder in Food Tray, Installation of

ORIGIN: TWA/CONVAIR Meeting of 21-23 January 1959

REASON FOR CHANGE: Customer request.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GAJ. WT. EMPTY | OPER. WT. EMPTY | |
| 468.0 lb | 468.0 lb | 45,909 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY _____

DATE: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

CONVAIR: SD

Hughes Tool Company
Change No. 260

Title: Sliding Glass Holder in Food Tray, Installation of

Origin: TWA/CONVAIR Meeting of 21-23 January 1959

Reason for Change: Customer request.

Description of Change:

Page 106, Paragraph 3.19.1.1.5 PASSENGER SEATS:

Add the below sentence after the sentence which reads as follows:

"No food trays shall be provided on the aft face of the movable coat stowage."

"Each integral food tray shall be equipped with a sliding glass holder, measuring approximately four by six inches, located near the center on right hand side of each food tray."

Enclosure: (A) One copy of sketch - PROPOSED SLIDING GLASS HOLDER
(for information only)

Effect on Weight Empty: 468.0 pounds
Effect on Balance: 45,909 inch-pounds
Effect on Performance: None

NOTE: The language effects of CCP No. 97B (Integral Folding Food Trays) are included in this proposal.

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,378 DTD 27 January 1959

CHANGE NO: 259

MODEL: (880) 22-1

TITLE: Potable Water System Drain Fitting, Airterra, Installation of

ORIGIN: TWA/CONVAIR Meeting of 21-23 January 1959

REASON FOR CHANGE: Customer request.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | Negligible INCH LB. |
| <u>1.0 lb</u> | <u>1.0 lb</u> | |

EFFECT ON GUARANTEED PERFORMANCE: *
None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: 3D

Hughes Tool Company
Change No. 259

Title: Potable Water System Drain Fitting, Airterra, Installation of

Origin: FWA/CONVAIR Meeting of 21-23 January 1959

Reason for Change: Customer request.

Description of Change:

Page 100, (Cont), Paragraph 3.19.2.1.4 WATER SYSTEM:

Revise the third sentence as follows:

From: "The system shall provide for draining on the ground."

To: "The system shall provide for draining on the ground through a flush-type fitting equipped with a hose attachment for drain line."

Page 110B FIGURE 3.19-2 WATER SYSTEM:

Above illustration will be revised to show flush, hose attachment for drain line.

Enclosure: (A) One copy Figure 3.19-2, WATER SYSTEM SCHEMATIC (for information only)

Effect on Weight Empty: 1.0 pound
Effect on Balance: Negligible
Effect on Performance: None

ANALYSIS
 PREPARED BY T.E.
 CHECKED BY B.E.
 REVISED BY 2-28-58

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
 SAN DIEGO

PAGE 118B
 REPORT NO. ZD-22-002
 MODEL TWA
 DATE 12/10/57

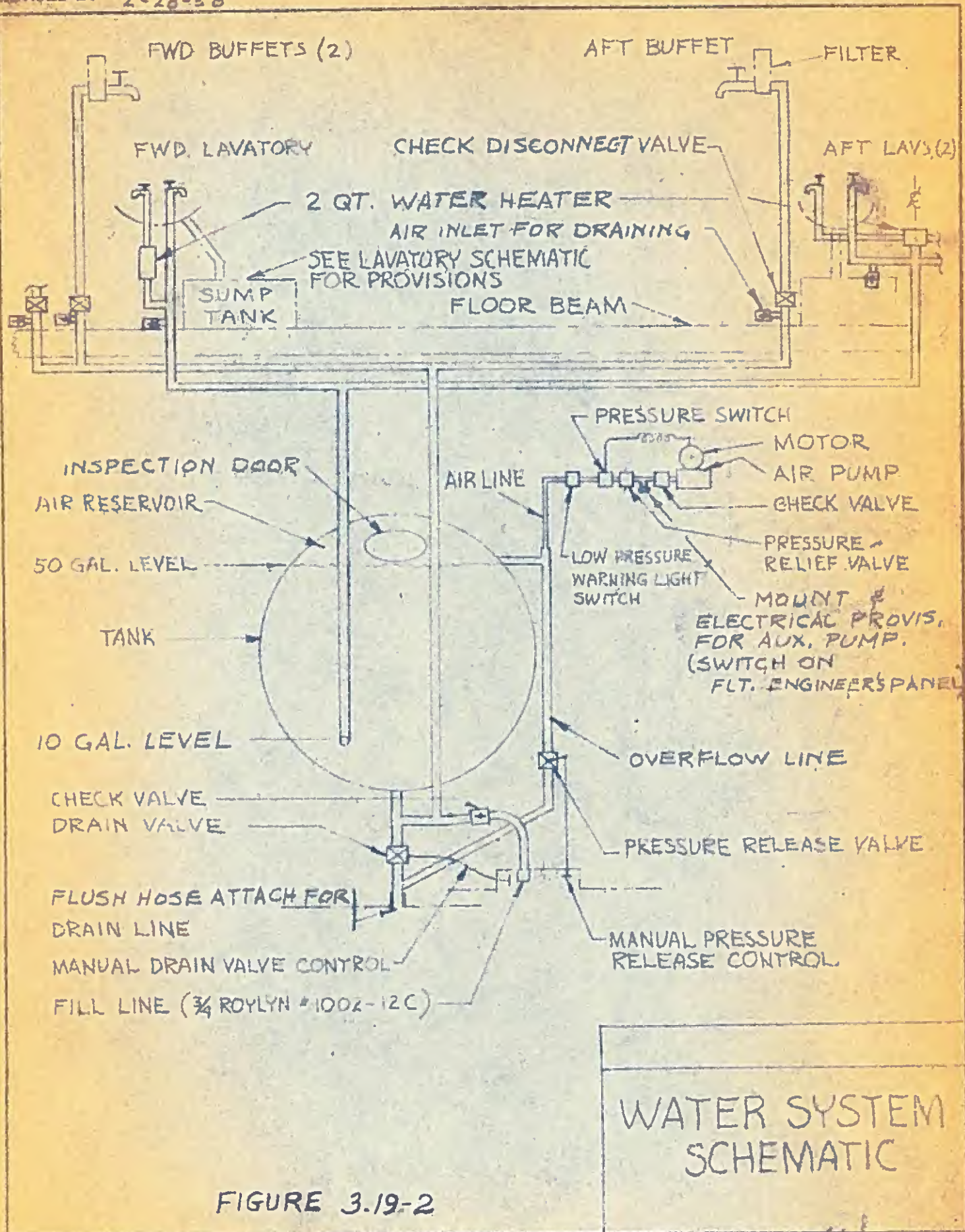


FIGURE 3.19-2

File

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool CompanyMCL 10,377 DTD 27 January 1959CHANGE NO: 258AMODEL: (880) 22-1TITLE: Burfet Waste Container, Nordskog-Type, Installation ofORIGIN: TWA/CONVAIR Conference at San Diego on 21-23 January 1959 and
TWA Letter 880-901A-200 dated 20 March 1959REASON FOR CHANGE: Customer request

EFFECT ON WEIGHT *

EFFECT ON BALANCE *

GUAR. WT. EMPTY

OPER. WT. EMPTY

0

+9.0 lbs

+4,126

INCH LB.

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND
TOTALS REFLECTED IN A FUTURE CHANGE PROPOSALACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON
PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 255A

Title: Buffet Waste Containers, Nordskog-Type, Installation of

Origin: TWA/CONVAIR Conference at San Diego on 21-23 January 1959 and
TWA Letter 380-901A-200 dated 20 March 1959

Reason for Change: Customer request.

Description of Change:

Page 108, Paragraph 3.19.2.1.2 BUFFET AND EQUIPMENT:

Change the sixth item in the equipment list as follows:

| | <u>No. 1</u> | <u>No. 2</u> | <u>No. 3</u> |
|--------------------------------|--------------|--------------|--------------|
| <u>From:</u> "Refuse Trap Door | 1 | 1 | 1" |
| <u>To:</u> "Refuse Trap Door | 2 | 2 | 1" |

Change the 22nd item in the equipment list as follows:

| | | | |
|--|---|---|----|
| <u>From:</u> "***Wet and Dry Refuse Container (with perforated removable divider) | 1 | 1 | 1" |
| <u>To:</u> "***Waste Container | 2 | 2 | 1" |

Delete the following item from the equipment list:

| | | | |
|---|---|---|----|
| "***Leak Proof Miscellaneous Storage Container | 1 | 1 | 0" |
|---|---|---|----|

Page A-14 (cont) APPENDIX I-C, FURNISHINGS:

Add the following item to the Description List:

| | | |
|--|---------|----------|
| "*5 Waste Containers (Buffet) (Physically interchangeable with Nordskog waste container No. 607b)" | Convair | 22-12782 |
|--|---------|----------|

Add the following to the bottom of Page A-14 (cont):

"*Fixed Useful Load Item"

Effect on Balance:

| | | |
|-----------------------------------|----------|-----------------|
| Effect on Weight Empty: | 0 | 0 |
| Effect on Operating Weight Empty: | +9.0 lbs | +4,125 inch-lbs |
| Effect on Performance: | None | |

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,373 DTD _____

CHANGE NO: 257

MODEL: (880) 22-1

TITLE: Tape Reproducuer, "Gables G-825", Installation of

ORIGIN: TWA requested by TWX No. 1-15, dated 19 January 1959

REASON FOR CHANGE: Customer request

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|-------------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| <u>723.0 lb</u> | <u>723.0 lb</u> | <u>76,141</u> INCH L.B. |

EFFECT ON GUARANTEED PERFORMANCE: * None

| | |
|--|----------------------|
| <p>* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL</p> <p>ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:</p> | ENGINEERING APPROVAL |
|--|----------------------|

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
|----------------------------|---------------------|

| | |
|---------------------|--|
| SPECIAL PROVISIONS: | <p>EFFECT ON PRICE PER AIRPLANE:</p> <p>RECURRING: _____</p> <p>NON-RECURRING: _____</p> <p>TOTAL: _____</p> |
|---------------------|--|

ACCEPTED: _____ CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 257

Title: Tape Reproducer, "Gables G-825", Installation of
Origin: TWA requested by TWX No. 1-15, dated 19 January 1959
Reason for Change: Customer request

Description of Change:

Page 89
Add the following item to the "Description" list:

"Tape Reproducing Unit (1/2 ATR)"

Delete the following item under "Provisions for the following systems shall be made:"

"Tape Reproducing Unit (1/2 ATR)"

Page 100, Paragraph 3.17.2.3.7 PUBLIC ADDRESS SYSTEM:

Change the third sentence as follows:

From: "The system shall be suitable for reproduction of music and shall include provisions for an airborne tape reproducer located in the radio rack."

To: "The system shall be suitable for reproduction of music and shall include an airborne tape reproducer located in the radio rack."

Page A-6, APPENDIX I-C, ELECTRONIC EQUIPMENT:

Add the following item under "PA SYSTEM":

| | | | |
|---|-----------------------|--------|--------|
| 1 | Tape Reproducing Unit | Gables | G-825" |
|---|-----------------------|--------|--------|

| | |
|-------------------------|--------------------|
| Effect on Weight Empty: | 423.0 pounds |
| Effect on Balance: | 46,141 inch-pounds |
| Effect on Performance: | None |

C O N V A I R

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,323 DTD _____

CHANGE NO: 256

MODEL: (880) 22-1

TITLE: Specification Administrative Change (Clarification of Specification language in Paragraphs 3.17.1.1, 3.17.3.1.1 and 3.17.3.5.2).

ORIGIN: Convair initiated.

REASON FOR CHANGE: To clarify the intent of the Specification.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| 0 | 0 | 0 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 256

Title: Specification Administrative Change (Clarification of Specification language in Paragraphs 3.17.1.1, 3.17.3.1.1 and 3.17.3.5.2).

Origin: Convair initiated.

Reason for Change: To clarify the intent of the Specification.

Description of Change:

Page 90, Paragraph 3.17.1.1 CONTROL PANELS:

Revise the eighth item in Description List as follows:

From: "Terrain Warning Indicator Panel"

To: "Terrain Warning Indicator Panel (On Pilots' Instrument Panel)"

Page 101, Paragraph 3.17.3.1.1 ANTENNAS:

Revise the second sentence as follows:

From: "Two flush type antennas shall be located in the underside of the wing in the trailing edge"

To: "Two flush-type antennas shall be located on the top of the fuselage as shown on Figure 3.17-3"

Page 102, Paragraph 3.17.3.5.2 ANTENNAS:

Revise the paragraph to read as follows:

"Antennas for the DMET systems shall be installed as follows:
No. 1 system on bottom of fuselage and No. 2 system on top of fuselage. (See Figure 3.17-3)"

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,372 DTD 14 January 1959

CHANGE NO: 255

MODEL: (880) 22-1

TITLE: Air Temperature Indicator, Change in Nomenclature of

ORIGIN: TWA requested by Letter No. 880S-332, dated 22 December 1958

REASON FOR CHANGE: Customer request

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|----------------------|----------------------|---------------------|
| GUAR. WT. EMPTY 0 | OPER. WT. EMPTY 0 | 0 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *
None

| | |
|---|----------------------|
| * NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES: | ENGINEERING APPROVAL |
|---|----------------------|

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
|----------------------------|---------------------|

| | |
|---------------------|---|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: RECURRING: _____ NON-RECURRING: _____ TOTAL: _____ |
|---------------------|---|

ACCEPTED: _____
BY: _____
DATE: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

CONVAIR: SD

Hughes Tool Company
Change No. 255

Title: Air Temperature Indicator, Change in Nomenclature of

Origin: TWA requested by Letter No. 880S-332, dated 22 December 1958

Reason for Change: Customer request

Page 57, Paragraph 3.14.1.3 ENGINE INSTRUMENTS:

Change the nomenclature of the fourth item in the instrument list as follows:

From: "One outside air temperature indicator"

To: "One ram air temperature indicator"

Page 61A, PILOT'S AND COPILOT'S INSTRUMENT PANELS:

Revise above illustration by changing nomenclature of "FREE AIR TEMP" indicator to "RAM AIR TEMP".

Page A-9, APPENDIX I-C, INSTRUMENTS AND RELATED EQUIPMENT:

Change the third item from top of page as follows:

From: "1 Free Air Temp. Indicator Lewis 161C20"

To: "1 Ram Air Temp. Indicator Lewis (P/N to supplied)"

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,368 DTD 5 January 1959

CHANGE NO: 254

MODEL: (880) 22-1

TITLE: Revised Exterior Markings and Color Schemes

ORIGIN: TWA requested by Letter Nos. 880-840, dated 15 December 1958 and 8808-340, dated 6 January 1959

REASON FOR CHANGE: Customer request

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|------------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| <u>21.0 lb</u> | <u>21.0 lb</u> | <u>19,866</u> INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

FORM 100-100-1

CONVAIR: SD

Hughes Tool Company
Change No. 254

Title: Revised Exterior Markings and Color Schemes

Origin: TWA requested by Letter Nos. 880-840, dated 15 December 1958
and 880S-340, dated 6 January 1959

Reason for Change: Customer request

Description of Change:

Page A-15, APPENDIX I-C, FURNISHINGS:

Change the bottom item as follows:

From: "Exterior Marking and Color Scheme Paint
(including weight for CAA numbers and
identification)

83.0 lb

To: "Exterior Markings and Color Scheme Paint
(including weight for CAA numbers and
identification)

104.0 lb"

Effect on Weight Empty: ~~4~~21.0 pounds
Effect on Balance: ~~4~~19,866 inch-pounds
Effect on Performance: None

The following shall not appear in the Specification language:

The prime coat is Pacific Paint and Varnish Company "Super Koropon 765". The epoxy finish coat is Andrew Brown Company "No. A-423". The red and grey colors will match samples submitted with TWA Letter No. 880S-350, dated 26 January 1959.

Markings will be applied in accordance with Convair Dwg 22-98001, revised as follows:

- a. Reduce height of TWA fleet number to five inches
- b. Increase height of forward "TWA" on the fuselage to 24 inches
- c. Provide Convair decal with clear background

NOTE: This proposal includes the effects of CCP No. 216 (Exterior Markings and Color Schemes, TWA Selected)

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER. Hughes Tool Company

MCL 10,322 DTD _____

CHANGE NO: 253D

MODEL 22-1 (Convair "880")

TITLE: Specification Administrative Change (Incorporation of Indicator Light List)

ORIGIN: Detail Specification Requirements, R.F.C. No. 3.16-36, TWA Letter 880-993, dated 30 June 1959 and TWA Letter 880-1047A-259 dated 2 September 1959.

REASON FOR CHANGE: As above, and revision to CCP No. 253C.

EFFECT ON WEIGHT *

EFFECT ON BALANCE *

GUAR. WT. EMPTY

OPER. WT. EMPTY

0

0

0 INCH LB.

EFFECT ON GUARANTEED PERFORMANCE: *

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

B. J. Simons

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

Title: Specification Administrative Change (Incorporation of Indicator Light List)

Origin: Detail Specification Requirement, R.F.C. No. 3.16-36, TWA Letter 880-993, dated 30 June 1959 and TWA Letter 880-1047A-259 dated 2 September 1959

Reason for Change: As above, revision to CCP No. 253C.

Description of Change:

Page 81, Paragraph 3.16.11.3.1 WARNING LIGHT DIMMING PROVISIONS:

Delete the following from the paragraph:

"Quantity Description Color Dimming or Nondimming Location

Items above shall be appropriately incorporated when this information is available."

Add the following to the end of the paragraph:

| Quan Reqd | Description | Color | Cap Dim- ming | Elec- trical Dimming |
|--------------------------------|------------------------------------|-------|---------------------|----------------------------|
| <u>FLIGHT ENGINEER STATION</u> | | | | |
| 4 | Gen. Off (A-C Power) | Amber | | X |
| 4 | Gen. Overheat (A-C Power) | Red | | X |
| 1 | Low Water Press. | Amber | | X |
| 6 | Trans. Pump Low Press. (Fuel Sys) | Amber | | X |
| 8 | Booster Pump Low Press. (Fuel Sys) | Red | | X |
| 4 | Engine Pump Low Press. (Fuel Sys) | Red | | X |
| 2 | Valve Open (Fuel Sys) | Red | | X |
| 10 | Valve in Transit (Fuel Sys) | Blue | | X |
| 4 | Emerg. Valve Closed (Fuel Sys) | Red | | X |
| 4 | High-Low Press. (Hyd. Sys) | Amber | | X |
| 2 | Supply Press. Low (Hyd. Sys) | Amber | | X |
| 2 | Overspeed Trip (Freon Comp) | Amber | | X |
| 1 | Low Air Flow (Air Cond) | Amber | | X |
| 1 | L.H. Freon Fail (Air Cond) | Amber | | X |
| 1 | R.H. Freon Fail (Air Cond) | Amber | | X |
| 1 | High Alt (Cabin Press) | Red | | X |
| 1 | Fwd Fail (Air Cond) | Amber | | X |
| 1 | Aft Fail (Air Cond) | Amber | | X |
| 2 | Bus Off (D-C Power) | Amber | | X |
| 1 | Charger Relay Open (D-C Power) | Amber | | X |
| 1 | Main Out (A-C Power) | Amber | | X |
| 1 | Standby Out (A-C Power) | Red | | X |
| 2 | Bus Off (A-C Power) | Amber | | X |
| 1 | Aux. Conn. (A-C Power) | White | | X |
| 1 | Main Conn. (A-C Power) | White | | X |
| 1 | Aux. on Bus (A-C Power) | Blue | | X |
| 1 | Main on Bus (A-C Power) | Blue | | X |
| 4 | Drive Malfunct. (A-C Power) | Red | | X |
| 8 | Cont. Open (A-C Power) | Amber | | X |

| <u>Quan</u> <u>Reqd</u> | <u>Description</u> | <u>Color</u> | <u>Cap</u> <u>Dim-</u> <u>ming</u> | <u>Elec-</u> <u>trical</u> <u>Dimming</u> |
|---------------------------------|---------------------------------|----------------|--|---|
| <u>PILOTS' INSTRUMENT PANEL</u> | | | | |
| 4(dual) | Reverse Thrust-in-Transit | Amber- Blue | | X |
| 1 | Landing Gear Door Open | Red | | X |
| 1 | L.G. Truck Position | Amber | | X |
| 1 | Gear Unsafe | Red | | X |
| 1 | R.H. Main Gear Down and Locked | Green | | X |
| 1 | Nose Gear Down and Locked | Green | | X |
| 1 | L.H. Main Gear Down and Locked | Green | | X |
| 1 | Glide Slope Armed | Blue | X | |
| 1 | Elev. Out of Trim | Red | | X |
| 1 | Autopilot Disengaged | Red | | X |
| 4 | Oil Press. Low | Amber | | X |
| 1 | Instru. Power Failure | Red | | X |
| 2 | Compass Deviation | Red | | X |
| 1 | Airway (Marker Beacon) | White | X | |
| 1 | Outer (Marker Beacon) | Blue | X | |
| 1 | Middle (Marker Beacon) | Amber | X | |
| 1 | 500 (Terrain Warning) | Red | X | |
| 1 | 1000 (Terrain Warning) | Yellow | X | |
| 1 | 2000 (Terrain Warning) | Orange | X | |
| 1 | Master Caution - Press to Reset | Amber | | X |
| 1 | Essential Bus Failure | Red | | X |

| <u>Quan</u> <u>Reqd</u> | <u>Description</u> | <u>Color</u> | <u>Cap</u> <u>Dim-</u> <u>ming</u> | <u>Elec-</u> <u>trical</u> <u>Dimming</u> |
|---------------------------------------|-----------------------------------|--------------|--|---|
| <u>PILOTS' OVERHEAD CONSOLE PANEL</u> | | | | |
| 1 | Stewardess Call | White | | X |
| 1 | Stewardess Call Switch | Blue | | X |
| 1 | Rainclear "ON" | Blue | | X |
| 2 | Pitot Heaters "ON" | Blue | | X |
| 2 | L.H. and R.H. Landing Lights Ext. | Amber | | X |
| 4 | Engine Anti-Ice "CLOSED" | Amber | | X |
| 4 | Engine Bleed Air "CLOSED" | Amber | | X |
| 1 | High Duct Press. | Red | | X |
| 1 | Excess Heat (Anti-Ice, Structure) | Red | | X |
| 1 | Ice Signal Warning | Red | | X |
| 1 | Anti-Ice "ON" | Blue | | X |
| 2 | Anti-Ice, Closed Inboard | Amber | | X |

CONVAIL: SD

Hughes Tool Company
Change No. 253D

Page 3 of 3

| <u>Quan</u> <u>Read</u> | <u>Description</u> | <u>Color</u> | <u>Cap</u> <u>Dim-</u> <u>ming</u> | <u>Elec-</u> <u>trical</u> <u>Dimming</u> |
|----------------------------|-------------------------------------|--------------|--|---|
| 2 | Anti-Ice, Closed Center | Amber | | X |
| 2 | Anti-Ice, Closed Outboard | Amber | | X |
| 1 | Malfunc Tail | Amber | | X |
| 1 | Malfunc Radome | Amber | | X |
| 3 | Excess Heat, Anti-Ice and Isolation | Red | | X |

| <u>Quan</u> <u>Read</u> | <u>Description</u> | <u>Color</u> | <u>Cap</u> <u>Dim-</u> <u>ming</u> | <u>Elec-</u> <u>trical</u> <u>Dimming</u> |
|----------------------------|--------------------|--------------|--|---|
|----------------------------|--------------------|--------------|--|---|

AFT PEDESTAL CONTROL

| | | | | |
|---|-----------------------|-------|--|---|
| 1 | Public Address "Push" | Amber | | X |
|---|-----------------------|-------|--|---|

FORWARD PEDESTAL

| | | | | |
|---|--|-------|--|---|
| 1 | Nose Landing Gear, Anti-Skid Inoperative | Amber | | X |
| 1 | Main Landing Gear, Anti-Skid Inoperative | Amber | | X |

PILOTS' GLASS SHIELD

| | | | | |
|---------|------------------------------------|-----|--|---|
| 4 | Fire Control Switch Warning Lights | Red | | X |
| 2(dual) | Agent Out (Fire Exting. Sys.) | Red | | X |

R.H. PILOT'S AUX. PANEL

| | | | | |
|---|------------------------|-----|--|---|
| 1 | Door Open, Above Floor | Red | | X |
| 1 | Door Open, Below Floor | Red | | X |

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,321 DTD _____

CHANGE NO: 252

MODEL: (880) 22-1

TITLE: Specification Administrative Change (change aisle width from 28 to 24 inches).

ORIGIN: Convair initiated.

REASON FOR CHANGE: To make Specification language consistent with CCP No. 104B (52-inch Passenger Seat) which decreased aisle width four inches.

EFFECT ON WEIGHT *

EFFECT ON BALANCE *

GUAR. WT. EMPTY

OPER. WT. EMPTY

0

0

0 INCH LB.

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 252

Title: Specification Administrative Change (change aisle width from 28 to 24 inches).

Origin: Convair initiated

Reason for Change: To make Specification language consistent with CCP No. 104B (52-inch Passenger Seat) which decreased aisle width four inches.

Description of Change:

Page 113, Paragraph 3.19.3.1.1 PASSENGER COMPARTMENT:

Revise the second sentence as follows:

From: "The passenger compartment shall be approximately 28 inches wide between inboard arm rests and a full head height of 85 inches from the top of the floor."

To: "The passenger compartment shall be approximately 24 inches wide between inboard arm rests and a full head height of 85 inches from the top of the floor."

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002 DATE: _____

CUSTOMER: Hughes Tool Company MCL 10,320 DTD _____

CHANGE NO: 251 MODEL: (880) 22-1

TITLE: Specification Administrative Change (change jack pad adapters from AAF to MS-type)

ORIGIN: Convair initiated.

REASON FOR CHANGE: AAF Drawing No. H41B1287, for external fuselage and wing jack pad adapters, is obsolete and has been replaced by MS-33559.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| 0 | 0 | 0 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *
None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 251

Title: Specification Administrative Change (change jack pad adapters from AAF to MS-type)

Origin: Convair initiated

Reason for Change: AAF Drawing No. H41B1287, for external fuselage and wing jack pad adapters, is obsolete and has been replaced by MS-33559.

Description of Change:

Page 127, Paragraph 3.22.2 JACKING PROVISIONS:

Revise the last sentence as follows:

From: "External fuselage and wing jack pads shall incorporate AAF Drawing H41B1287 Type fittings, on mating surface to ground jack assembly."

To: "External fuselage and wing jack pad adapters shall conform to MS-33559 - Type II on mating surface to ground jack assembly."

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,370 DTD 7 January 1959

CHANGE NO: 250

MODEL: (880) 22-1

TITLE: Inertia Reels and Harnesses, Aerotherm, Installation of

ORIGIN: Delta requested and Convair proposed for TWA

REASON FOR CHANGE: As above.

EFFECT ON WEIGHT *

EFFECT ON BALANCE *

GUAR. WT. EMPTY

OPER. WT. EMPTY

Proposal "A" 0

Proposal "A" 0

Proposal "A" 0

Inch Lb.

Proposal "B" ~~3.0 lb~~

Proposal "B" ~~3.0 lb~~

Proposal "B" ~~2,556~~

INCH LB.

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 250

Page 1 of 2

Title: Inertia Reels and Harnesses, Aerotherm, Installation of

Origin: Delta requested and Convair proposed for TWA

Reason for Change: As above

Description of Change:

PROPOSAL "A"

Page A-14, APPENDIX I-C, FURNISHINGS:

Change the sixth and seventh items in the Description List as follows:

From: "2 Pilots' Safety Belt and Shoulder Harness
1 Flight Engineer's Safety Belt and Shoulder Harness"

To: "2 Pilots' Safety Belts
1 Flight Engineer's Safety Belt

Add the following item under the above:

| | | |
|--|-------------------------------|------------------------|
| "3 Inertia Reels and Harness (Pilot, Copilot and Flight Engineer) | Aircraft Mechanics Inc. | Aerotherm Model 95" |
|--|-------------------------------|------------------------|

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

PROPOSAL "B"

Page 106, Paragraph 3.19.1.1.6 SAFETY BELTS:

Revise the last sentence as follows:From: "Inertia reels for the shoulder harness shall be provided for the pilot, copilot and flight engineer."To: "Inertia reels for the shoulder harnesses shall be provided for the pilot, copilot, flight engineer and observer; and a special inertia reel and strap shall be provided for the forward facing cabin attendant."

Page A-14, APPENDIX I-C, FURNISHINGS:

Add the following item to the Description List:

| | | |
|---|-------------------------------|------------------------|
| "1 Inertia Reel and Strap (For forward facing stewardess) | Aircraft Mechanics Inc. | Aerotherm Model 94" |
|---|-------------------------------|------------------------|

Add the following items under the above:

| | | |
|---|-------------------------------|------------------------|
| "1 Observer's Safety Belt | | |
| 1 Inertia Reel and Harness (For Observer) | Aircraft Mechanics Inc. | Aerotherm Model 95" |

| | |
|-------------------------|--------------------|
| Effect on Weight Empty: | 43.0 pounds |
| Effect on Balance: | 42,556 inch-pounds |
| Effect on Performance: | None |

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,364 DTD 12 December 1958

CHANGE NO: 249

MODEL: (880) 22-1

TITLE: Customer Vended Equipment, Deletion of

ORIGIN: TWA requested by TWX 880-805A-157, dated 20 November 1958 and TWX 880-806, dated 20 November 1958

REASON FOR CHANGE: Customer request

EFFECT ON WEIGHT *

EFFECT ON BALANCE *

GUAR. WT. EMPTY

OPER. WT. EMPTY

0

0

0 INCH LB.

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: *

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

Title: Customer Vended Equipment, Deletion of

Origin: TWA requested by TWX 880-805A-157, dated 20 November 1958
and TWA 880-806, dated 20 November 1958

Reason for Change: Customer request

Description of Change:

Page 103, Paragraph 3.17.4.2 TERRAIN WARNING TRANSCEIVER:

Delete the following last three sentences from paragraph:

"TWA will furnish the TWI electronic unit as customer furnished equipment. Also, TWA will endeavor to furnish line test equipment which can be used by Convair to check out the installed TWI system on the flight line. If the line test equipment can not be furnished seasonably, some alternate arrangement will be negotiated by TWA and Convair."

Page 104C, Figure 3.17-3 ANTENNA ARRANGMENT:

Above figure to be revised to show terrain warning antenna.

Page 118 (Cont), Paragraph 3.19.6.1 FIRST AID KIT:

Change the paragraph as follows:

From: "Provisions for stowage of one first aid kit shall be made, location of which shall be subject to mock-up approval."

To: "One first aid kit shall be provided, and stowed in the aft left hand coat compartment."

Page A1, APPENDIX I-A, CUSTOMER FURNISHED - CONVAIR INSTALLED:

Delete all items from page which consist of the following:

"ELECTRONIC EQUIPMENT"

- 1 Terrain Warning Transceiver
Weight 14.6 lb
- 1 Transceiver Shock Mount

TRXED-13A
290-2537

CONVAIR: SD

Hughes Tool Company
Change No. 249

Page 2 of 2

OXYGEN EQUIPMENT

*3 High Pressure Oxygen Cylinder Assemblies
(107 cu. ft.) .177 lb

890942

FURNISHINGS

1 First Aid Kit

44-0336

*Useful load item."

Page A-7, APPENDIX I-C, ELECTRONIC EQUIPMENT:

Add the following items under "TERRAIN WARNING SYSTEM"

"1 Terrain Warning Transceiver
1 Transceiver Shock Mount

97-30010-001
90-54007-004"

Page A-14 Cont., APPENDIX I-C, FURNISHINGS:

Add the following item to the Description List:

"*1 First Aid Kit

44-0336"

Add the following to bottom of Page A-14 Cont.:

"*Fixed Useful Load"

Page 18, APPENDIX I-C, OXYGEN EQUIPMENT:

Add the following item to the Description List:

*3 High Pressure Oxygen Cylinder Assemblies

Walter Kidde
890941
or
ZEP AERO
ZC-268-111"

Add the following to the bottom of Page A-18:

"*Fixed Useful Load"

Effect on Balance

| | | |
|------------------------------------|------|---|
| Effect on Guaranteed Weight Empty: | 0 | 0 |
| Effect on Operating Weight Empty: | 0 | 0 |
| Effect on Useful Load: | 0 | 0 |
| Effect on Performance: | None | |

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,318 DTD _____

CHANGE NO: 247

MODEL: (880) 22-1

TITLE: Specification Administrative Change (designation of service interphone stations)

ORIGIN: TWA requested by Letter No. 880-106, dated 28 March 1957.

REASON FOR CHANGE: See body of CCP

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| 0 | 0 | 0 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *
None

| | |
|--|----------------------|
| <p>* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL</p> <p>ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:</p> | ENGINEERING APPROVAL |
|--|----------------------|

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 247

Title: Specification Administrative Change (designation of service
interphone stations)

Origin: TWA requested by Letter No. 880-106, dated 28 March 1957.

Reason for Change: See body of CCP.

Description of Change:

Page 99, Paragraph 3.17.2.3.5 SERVICE INTERPHONE:

Revise the following items in interphone station list as follows:

From: "6. Forward and Aft Ends of Forward Cargo Compartment
7. Forward and Aft Ends of Aft Cargo Compartment"

To: "6. Hydraulic Compartment
7. Air-Conditioning Compartment"

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
4001 WILSON AVENUE, TORONTO, CANADA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,366 DTD 16 December 1958

CHANGE NO: 245

MODEL. (880) 22-1

TITLE Flush Buffet Door Latches, Installation of

ORIGIN TWA requested by TWX No. 12-5, dated 9 December 1958

REASON FOR CHANGE: Customer request.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|----------------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| <u>1.0 lb</u> | <u>1.0 lb</u> | <u>Negligible</u> INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: None

| | |
|--|----------------------|
| <p>* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL</p> <p>ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES.</p> | ENGINEERING APPROVAL |
|--|----------------------|

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
|----------------------------|---------------------|

| | |
|--------------------|---|
| SPECIAL PROVISIONS | <p>EFFECT ON PRICE PER AIRPLANE</p> <p>RECURRING: _____</p> <p>NON-RECURRING: _____</p> <p>TOTAL: _____</p> |
|--------------------|---|

ACCEPTED _____

BY: _____

DATE: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

CAMVAIR: SE

Hughes Tool Company
Change No. 245

Title: Flush Buffet Door Latches, Installation of

Origin: TWA requested by TWX No. 12-5, dated 9 December 1958

Reason for Change: Customer request

Description of Change:

This change has no effect on Specification language, and consists of providing Nordskog flush-type latches on buffet doors in lieu of Weber-type latches, part number 20060.

Effect on Weight Empty: 1.0 pound
Effect on Balance: Negligible
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,365 DTD Revised 9 March 1959

CHANGE NO: 244A

MODEL: (880) 22-1

| | | |
|---|--------------------------------|---|
| TITLE: <u>Nordskog Buffet Ovens, Installation of</u> | | |
| ORIGIN: <u>TWA requested by TWX No. 12-5, dated 9 December 1958 and TWA S.O. 880-1-212</u> | | |
| REASON FOR CHANGE: <u>Customer request.</u> | | |
| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
| GUAR. WT. EMPTY 0 | OPER. WT. EMPTY #2.0 lb | #2,620 INCH LB. |
| EFFECT ON GUARANTEED PERFORMANCE: * <div style="text-align: center;">None</div> | | |
| * NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES: | | ENGINEERING APPROVAL |
| LATEST DATE OF ACCEPTANCE: | | AIRPLANES AFFECTED: |
| SPECIAL PROVISIONS: | | EFFECT ON PRICE PER AIRPLANE: RECURRING: _____ NON-RECURRING: _____ TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

Title: Nordskog Buffet Ovens, Installation of

Origin: TWA requested by TWX No. 12-5 dated 9 December 1958

Reason for Change: Customer request.

Description of Change:

Page 108, Paragraph 3.19.2.1.2 BUFFET AND EQUIPMENT:

Change the third item under "NUMBER OF ITEMS IN BUFFET SECTION" as follows:

| | <u>No. 1</u> | <u>No. 2</u> | <u>No. 3</u> |
|--|--------------|--------------|--------------|
| <u>From:</u> "**Food Warming Oven (14-meal capacity) | 3 | 3 | 2" |
| <u>To:</u> "**Food Warming Oven (21-meal capacity) | 2 | 2 | 1" |

Change the fourth item under "NUMBER OF ITEMS IN BUFFET SECTION" as follows:

| | <u>No. 1</u> | <u>No. 2</u> | <u>No. 3</u> |
|--|--------------|--------------|--------------|
| <u>From:</u> "Casserole Carrier (14-meal capacity) | 3 | 3 | 2" |
| <u>To:</u> "Casserole Carrier (21-meal capacity) | 2 | 2 | 1" |

Page A-1, APPENDIX I-B, CUSTOMER FURNISHED - CUSTOMER INSTALLED EQPT.:

Change the fourth item in the Description List as follows:

| | |
|---|-----|
| <u>From:</u> "***7 Casserole Carriers @ 4 lb ea | 28" |
| <u>To:</u> "***5 Casserole Carriers (21-meal cap) @ 6 lb ea | 30" |

Delete the bottom item in the Description List as follows:

| | |
|-----------------------------------|----|
| ****1 Casserole Carrier @ 4 lb ea | 4" |
|-----------------------------------|----|

Page A-14 Cont., APPENDIX I-C, FURNISHINGS:

Add the following item to the Description List:

| | | |
|-------------------------------------|----------|-------|
| "5 Food Warming Ovens (21-meal cap) | Nordskog | 5146" |
|-------------------------------------|----------|-------|

- Enclosures: (A) One copy of Figure 3.19-5, Rev. D - No. 1 Buffet -
looking fwd @ station 328 (for preliminary use only)
- (B) One copy of Figure 3.19-6, Rev. D - No. 2 Buffet -
view looking aft (for preliminary use only)
- (C) One copy of Figure 3.19-7, Rev. D - view looking aft
at station 1296.12 (for preliminary use only)

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO. ZD- 22-002

DATE _____

CUSTOMER Hughes Tool Company

MCL 10,354 DTD Revised 27 November 1958

CHANGE NO. 243

MODEL (880) 22-1

| | | |
|--|---|--|
| TITLE <u>Course Deviation Indicator, Placarding of</u> | | |
| ORIGIN <u>TWA requested by Letter No. 8808-302, dated 5 November 1958, and verbal information from J. W. Bew of TWA on 18 December 1958.</u> | | |
| REASON FOR CHANGE: <u>Customer request</u> | | |
| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
| GUAR. WT. EMPTY <div style="text-align: center;">0</div> | OPER. WT. EMPTY <div style="text-align: center;">0</div> | <div style="text-align: center;">0</div> <div style="text-align: right;">INCH LB.</div> |
| EFFECT ON GUARANTEED PERFORMANCE: <u>None</u> | | |
| * NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL. ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES: | | ENGINEERING APPROVAL |
| LATEST DATE OF ACCEPTANCE: | | AIRPLANES AFFECTED: |
| SPECIAL PROVISIONS | | EFFECT ON PRICE PER AIRPLANE. RECURRING: _____ NON-RECURRING: _____ TOTAL: _____ |

ACCEPTED

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY _____

DATE _____

CONVAIR: SD

Hughes Tool Company
Change No. 243

Title: Course Deviation Indicator, Placarding of

Origin: TWA requested by Letter No. 880S-302, dated 5 November 1958,
and verbal information from J. W. Bew of TWA on 18 December 1958.

Reason for Change: Customer request

Description of Change:

Page 56, Paragraph 3.14.1.1 PILOT'S INSTRUMENTS:

Change the ninth item in instrument list as follows:

From: "One flight path indicator"

To: "One course deviation indicator (placarded "flight path
indicator")"

Page 56, Paragraph 3.14.1.2 COPILOT'S INSTRUMENTS:

Change the eighth item in instrument list as follows:

From: "One flight path indicator"

To: "One course deviation indicator (placarded "flight
path indicator")"

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

The following shall not appear in the Specification language:

The course deviation indicators shown on "Pilot's and Copilot's Instrument Panels" illustration will each be placarded "FLIGHT PATH INDICATOR". The nomenclature for this instrument as shown in APPENDIX I-C of Specification, is consistent with manufacturer's nomenclature and listed part number and therefore will not be changed.

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN FRANCISCO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO. ZD-22-002

DATE _____

CUSTOMER Hughes Tool Company

MCL 10,317 DTD _____

CHANGE NO. 242

MODEL (880) 22-1

TITLE Specification Administrative Change (provide assist ropes in flight compartment.

ORIGIN Convair initiated

REASON FOR CHANGE To clarify the intent of the Specification.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| 0 | 0 | 0 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY _____

DATE: _____

Title: Specification Administrative Change (provide assist ropes
in flight compartment)

Origin: Convair initiated

Reason for Change: To clarify the intent of the Specification.

Description of Change:

Page 118 (Cont), Paragraph 3.19.6.3 - EVACUATION PROVISIONS;

Revise the first sentence as follows:

From: "Suitable means shall be provided for assisting rapid evacuation
from emergency exits, including assist ropes at exits over the
wing and at the forward main entrance door".

To: "Suitable means shall be provided for assisting rapid evacuation
from emergency exits, including assist ropes at exits over the
wing and over left and right hand windows in flight compartment.
In addition, crew assist ropes shall be provided at the forward
main entrance door".

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,316 DTD _____

CHANGE NO: 241

MODEL: (880) 22-1

TITLE: Specification Administrative Change (Delete reference to aileron from Par. 3.5.2.6)

ORIGIN: Convair initiated.

REASON FOR CHANGE: To make Specification compatible with the airplane.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| 0. | 0 | 0 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

| | |
|---|----------------------|
| * NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL | |
| ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES: | |
| | ENGINEERING APPROVAL |

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 241

Title: Specification Administrative Change (Delete reference to
aileron from Par. 3.5.2.6)

Origin: Convair initiated.

Reason for Change: To make Specification compatible with the airplane.

Description of Change:

Page 22, Paragraph 3.5.2.6 WING TIPS:

Revise the last sentence in paragraph as follows:

From: "The wing tip shall have a removable cap and shall be
extended aft to provide protection for the outer extremity
of the aileron."

To: "The wing tip shall have a removable cap."

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,363 DTD 26 November 1958

CHANGE NO: 239

MODEL: (880) 22-1

TITLE: Dual Distance Measuring Equipment Tacan, Installation of

ORIGIN: TWA requested by TWX 11-11, dated 13 November 1958, and TWX 11-17, dated 20 November 1958

REASON FOR CHANGE: Customer request

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|-------------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| <u>+67.0 lb</u> | <u>+67.0 lb</u> | <u>+18,104</u> INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 239

Page 1 of 3

Title: Dual Distance Measuring Equipment Tacan, Installation of

Origin: TWA requested by TWX 11-11, dated 13 November 1958, and TWX 11-17, dated 20 November 1958

Reason for Change: Customer request

Description of Change:

Page 56, Paragraph 3.14.1.1 PILOT'S INSTRUMENTS:

Change the 11th item in the instrument list as follows:

From: "One distance measuring indicator (provisions)"

To: "One distance measuring equipment Tacan indicator"

Page 56, Paragraph 3.14.1.2 COPILOT'S INSTRUMENTS:

Change the tenth item in the instrument list as follows:

From: "One distance measuring indicator"

To: "One distance measuring equipment Tacan indicator"

Page 84, Paragraph 3.16.17 ESSENTIAL POWER (AC POWER):

Change the 11th item under "Radio-All" as follows:

From: "Distance Measuring Equipment"

To: "Distance Measuring Equipment Tacan"

Page 86, Paragraph 3.16.17 ESSENTIAL POWER (DC POWER):

Change the 11th item under "Radio-All" as follows:

From: "Distance Measuring Equipment (1 of 2)"

To: "Distance Measuring Equipment Tacan"

Page 89, Paragraph 3.17.1 EQUIPMENT:

Add the following item to the Description List:

"Dual Distance Measuring Equipment Tacan"

Delete the below item under "Provisions for the following systems shall be made"

"Dual Distance Measuring Equipment Tacan"

Page 102, Paragraph 3.17.3.5 DISTANCE MEASURING EQUIPMENT TACAN
(Provisions):

Revise the paragraph title and paragraph as follows:

"DUAL DISTANCE MEASURING EQUIPMENT TACAN: Dual distance measuring equipment Tacan systems shall be installed in the radio rack. A separate circuit breaker and fuse shall be installed for each system".

Page 102, Paragraph 3.17.3.5.1 INDICATORS:

Revise the first sentence to read as follows:

"One DMET indicator shall be installed in the pilot's instrument panel and one in the copilot's instrument panel".

Page 102, Paragraph 3.17.3.5.2 ANTENNAS:

Revise the paragraph to read as follows:

"Antennas for the DMET systems shall be installed as follows: No. 1 system on bottom of fuselage and No. 2 system on top of fuselage".

Page A-5, APPENDIX I-C, ELECTRONIC EQUIPMENT:

Add the following to the page:

"DISTANCE MEASURING EQUIPMENT TACAN (DUAL)"

| | | | |
|---|--------------|------------------|----------------|
| 2 | Transponders | Federal | Type AFN-3544 |
| 2 | Indicators | Federal | Type T8510-11N |
| 2 | Antennas | Electronic Spec. | LB-147-A" |

Figure 3.14-1 PILOT'S AND COPILOT'S INSTRUMENT PANELS:

Revise above illustration to show DMET indicator installation
in lieu of provisions.

Figure 3.17-3 ANTENNA ARRANGEMENT:

Revise above illustration to show DMET antenna installation
in lieu of provisions.

| | |
|-------------------------|------------------|
| Effect on Weight Empty: | +67.0 lbs |
| Effect on Balance: | +18,104 Inch-lbs |
| Effect on Performance: | None |

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,362 DTD 13 November 1958

CHANGE NO: 238

MODEL: (880) 22-1

TITLE: Tape Reproducer, "Presto", Installation of

ORIGIN: TWA requested by Letter No. 880-785, dated 28 October 1958

REASON FOR CHANGE: Customer request

Rejected

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|-----------------------------|-----------------------------|---------------------|
| GUAR. WT. EMPTY +22.0 lb | OPER. WT. EMPTY +22.0 lb | +5,874 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *
None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

ENGINEERING APPROVAL

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

BY: _____

DATE: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

Title: Tape Reproducer, "Presto", Installation of

Origin: TWA requested by Letter No. 880-785, dated 28 October 1958

Reason for Change: Customer request

Description of Change:

Page 89, Paragraph 3.17.1 - EQUIPMENT:

Add the following item to the "Description" list:

"Tape Reproducing Unit (1/2 ATR)"

Delete the following item under "Provisions for the following systems shall be made":

"Tape Reproducing Unit (1/2 ATR)"

Page 100, Paragraph 3.17.2.3.7 - PUBLIC ADDRESS SYSTEM:

Change the third sentence as follows:

From: "The system shall be suitable for reproduction of music and shall include provisions for an airborne tape reproducer located in the radio rack".

To: "The system shall be suitable for reproduction of music and shall include an airborne tape reproducer located in the radio rack".

Page A-6, APPENDIX I-C, ELECTRONIC EQUIPMENT

Add the following item under "P.A. SYSTEM"

"1 Tape Reproducer (1/2 ATR)

Presto

Type MPB 600"

Effect on Weight Empty: +22.0 lbs
Effect on Balance: +5,874 inch-lbs
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO. ZD- 22-002

DATE

CUSTOMER: Hughes Tool Company

MCL 10,361 DTD 18 November 1958

CHANGE NO. 237

MODEL (880)22-1

TITLE: Spare Wiring-Conduit, Installation of

ORIGIN TWA requested by Letter No. 8808-294, dated 27 October 1958

REASON FOR CHANGE: Customer request

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|-----------------------------------|-----------------------------------|---------------------------|
| GUAR. WT. EMPTY <u>+5.0 lb</u> | OPER. WT. EMPTY <u>+5.0 lb</u> | <u>+3,900</u> INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING:

NON-RECURRING:

TOTAL:

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY:

DATE:

Title: Spare Wiring Conduit, Installation of

Origin: TWA requested by Letter No. 880S-294, dated 27 October 1958

Reason for Change: Customer request

Description of Change:

Page 68 (Cont), Paragraph 3.16.5.6.1 - Conduit Location:

Add the following to the end of the paragraph:

"Two sections of one inch rigid conduit, each approximately 12 feet long, shall be installed below the cabin floor (and attached by clips to floor beams) between the front spar and the aft main wheel well to permit future routing of new wiring without removing cabin seats and floor panels".

| | |
|-------------------------|-----------------|
| Effect on Weight Empty: | +5.0 lbs |
| Effect on Balance: | +3,900 inch-lbs |
| Effect on Performance: | None |

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,359 DTD 3 November 1958

CHANGE NO: 236

MODEL: (880) 22-1

TITLE: Power Supply, 416W-5 Collins, Change of

ORIGIN: TWA requested by Letter No. 880-780A-178, dated 23 October 1958

REASON FOR CHANGE: Customer request.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| 0 | 0 | 0 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS.

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 236

Title: Power Supply, 416N-5 Collins, Change of

Origin: TWA requested by Letter No. 880-780A-178, dated 23 October 1958

Reason for Change: Customer request.

Description of Change:

Page A-5, APPENDIX I-C, ELECTRONIC EQUIPMENT:

Change the third item under "VHF NAVIGATION SYSTEM" as follows:

From: "2 Power Supply (416N-5) Collins 505-3706-013"

To: "2 Power Supply (416N-5) Collins 505-3706-003"

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,357 DTD 20 October 1958

CHANGE NO: 235

MODEL: (880) 22-1

TITLE: No. 2 Leading Edge Slat, Installation of

ORIGIN: TWA/Delta/Convair Conferences of 1 and 2 April 1958 and 17 December 1958

REASON FOR CHANGE: To reduce take-off distances.

Cancelled

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|---|---|---|
| GUAR. WT. EMPTY <div style="text-align: center;">4531.0 lb</div> | OPER. WT. EMPTY <div style="text-align: center;">4531.0 lb</div> | <div style="font-size: 1.2em;">446,127 INCH LB.</div> |
| EFFECT ON GUARANTEED PERFORMANCE: * <div style="text-align: center;">As noted.</div> | | |
| * NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES: | | ENGINEERING APPROVAL |
| LATEST DATE OF ACCEPTANCE: | | AIRPLANES AFFECTED: |
| SPECIAL PROVISIONS: | | EFFECT ON PRICE PER AIRPLANE: RECURRING: _____ NON-RECURRING: _____ TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

Title: No. 2 Leading Edge Slat, Installation of

Origin: TWA/Delta/Convair Conferences of 1 and 2 April 1958 and 17 December 1958

Reason for Change: To reduce take-off distances.

Description of Change:

Page 11, Paragraph 3.1.1.1 GUARANTEED PERFORMANCE:

Change the last two items on page 11 and the first item on page 12 as follows:

| | | | | |
|--------------|--|----|------|--------|
| <u>From:</u> | "Take-off distance at sea level over 50-ft obstacle in accordance with CAR 4b (1.2 V_{S_1} used for take-off speed) with a weight of 140,000 lb | Ft | ±5% | 4,630 |
| | Take-off distance at sea level over 35-ft obstacle in accordance with SR-422 (1.2 V_{S_1} used for take-off speed) with a weight of 178,500 lb at lift off | Ft | ±736 | 7,910 |
| | Take-off distance at sea level over 31-ft obstacle in accordance with CAR 4b (1.2 V_{S_1} used for take-off speed) on a 90-degree F day with weight of 160,000 lb | Ft | ±5% | 6,820" |
| <u>To:</u> | "Take-off distance at sea level in accordance with SR-422A regulations for a segmental flight path with weight of 140,000 lb at lift off | Ft | ±5% | 4,980 |
| | Take-off distance at sea level in accordance with SR-422A regulations for a segmental flight path with weight of 178,500 lb at lift off | Ft | ±650 | 7,010 |
| | Take-off distance at sea level in accordance with SR-422A regulations for a segmental flight path on a 90-degree F day with weight of 160,000 lb at lift off.. | Ft | ±5% | 6,600" |

Page 12, GUARANTEED PERFORMANCE:

Under "STALL SPEEDS", change paragraph b. as follows:

From: "98 knots \pm 8 knots at 123,500 lb with landing flap setting used for landing distance guarantee"

To: "97 knots \pm 8 knots at 123,500 lb with landing flap setting used for landing distance guarantee"

Page 15, Paragraph 3.1.3.1 WING:

Add the following new item to the end of the paragraph:

"Leading Edge Slats

Extensible"

Page 19, Paragraph 3.4.1 STRENGTH:

Change the third item in design condition list as follows:

From: "Maximum zero fuel weight (lb) 113,000"

To: "Maximum zero fuel weight (lb) 113,531"

Page 19, Paragraph 3.4.2 DESIGN SPEEDS:

Add the following item after the fifth item which is "Design speed (flaps 1/2 down) 245K or M = 0.60":

"Design speed (leading edge slat extension) ... 245K or M = 0.60"

Page 23, Add the following new paragraph to the page, after paragraph 3.5.4.2:

"3.5.4.2.1 LEADING EDGE SLATS: Extensible leading edge slats shall be provided."

Page 40, Paragraph 3.10.2.1 LIFT AND DRAG INCREASING DEVICE SYSTEMS:

Revise the paragraph to read as follows:

"The trailing edge flaps shall be operated by hydraulic power and the leading edge slats shall be operated by electrical power. Both systems shall be controlled by a single lever on the pilot's pedestal. The trailing edge flaps shall be operated by a hydraulic

motor-driven gear box located in the fuselage and powered by both hydraulic systems. The leading edge slats shall be operated by an electrical motor-driven gear box mounted in the leading edge section between screw jacks. In each system, torque tubes shall connect the gear box to mechanical actuators located adjacent to each flap section and slat section. Each system shall be irreversible to prevent flap motion from airload. Full trailing edge flap deflection shall be obtainable from either hydraulic system. An individual gear box, each powered by two electric motors, shall be provided for each leading edge slat. A monitoring system shall be provided to prevent asymmetrical flap positioning of either the trailing edge flaps or leading edge slats in the event of mechanical failure. Means shall be provided to warn the pilot that the flaps are extended and the airplane is operating at a speed in excess of the placard speed for that particular flap setting. Separate indicator lights for the left and right hand leading edge slats shall be provided which will illuminate when the slats have fully extended and will remain illuminated until the slats have fully retarded."

Page 57, Paragraph 3.14.1.3 ENGINE INSTRUMENTS:

Add the following item to the engine instrument list:

"Two leading edge slat indicator lights"

Page 130, Paragraph 3.23.2 EQUIPMENT INTERCHANGEABILITY:

Add the following item under paragraph "4. Inherently Interchangeable Parts"

"Leading Edge Slats"

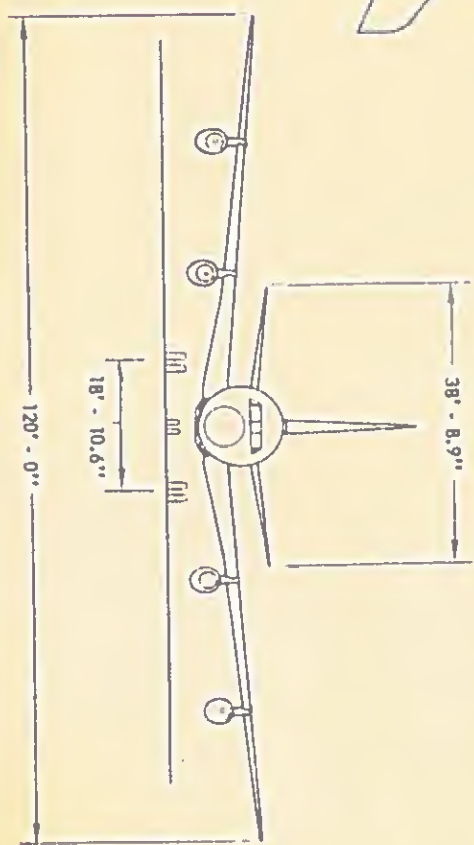
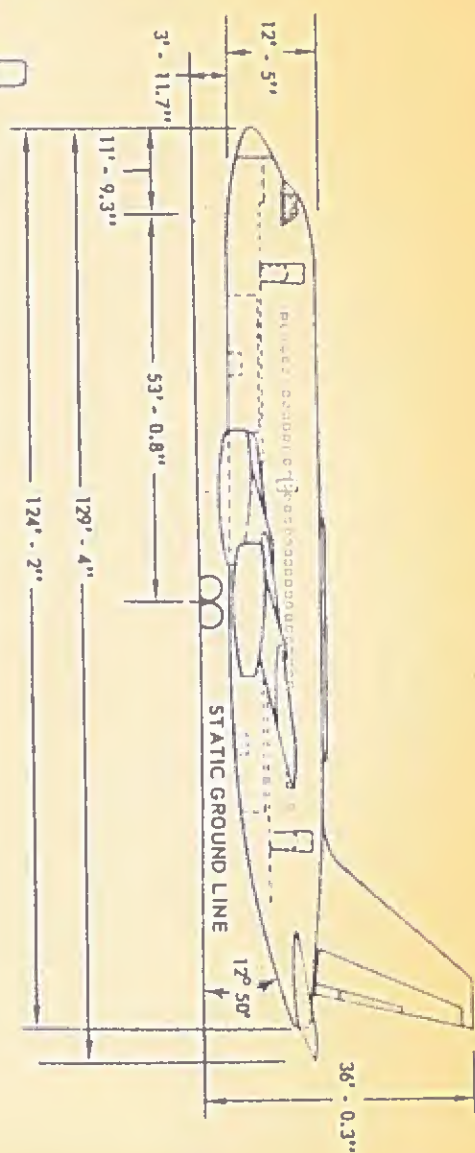
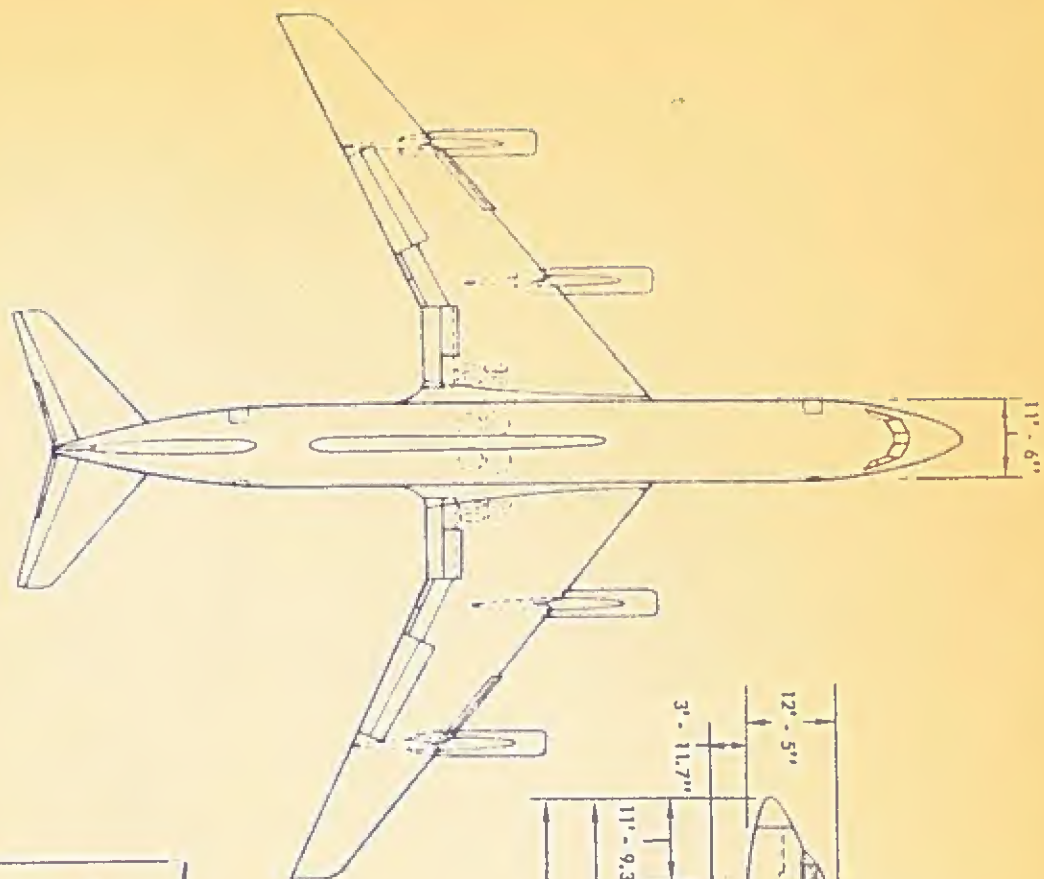
Page A-4, APPENDIX I-C, ELECTRICAL EQUIPMENT:

Add the following item to the Description List:

"2 Gear Boxes, Leading Edge Slat Actuating (with two electric motors each)"

- Enclosures: (A) One copy of Figure 1-1, GENERAL ARRANGEMENT (for information only, figure in Specification will be revised to show leading edge slats on acceptance of this Change)
- (B) One copy of Convair Drawing SD-58-03147 - WING L.E. SLAT (for information only)

Effect on Weight Empty: 4531.0 pounds
Effect on Balance: 446,127 inch-pounds
Effect on Performance: As noted



GENERAL ARRANGEMENT

TWA

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN FRANCISCO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO. ZD-22-002

DATE: _____

CUSTOMER Hughes Tool Company

MCL 10,360 DTD 11 November 1958

CHANGE NO. 234

MODEL: (880) 22-1

TITLE: HF Communication Equipment, Change from Installation to Provisions

ORIGIN: TWA requested by Letter No. 880-781, dated 27 October 1958

REASON FOR CHANGE: Customer request.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|-------------------------|
| WING, WT. EMPTY | OPER. WT. EMPTY | |
| <u>-86.0 lb</u> | <u>-86.0 lb</u> | <u>-61,383</u> INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL.

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE: _____

AIRPLANES AFFECTED: _____

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY _____

DATE: _____

FORM 10-58

Title: HF Communication Equipment, Change from Installation to Provisions

Origin: TWA requested by Letter No. 880-781, dated 27 October 1958

Reason for Change: Customer request.

Description of Change:

Page 83, Paragraph 3.16.17 ESSENTIAL POWER: (AC Power)

Under "Radio - All", change second item as follows:

From: "HF Transmitter"

To: "HF Transceiver (Provisions only)"

Page 85, Paragraph 3.16.17 ESSENTIAL POWER: (DC Power)

Under "Radio - All", change third item as follows:

From: "HF Transmitter"

To: "HF Transceiver (Provisions only)"

Page 89, Paragraph 3.17.1 EQUIPMENT:

Delete the first item under "Description" "(HF Communication System, provisions only for second system)"

Change the second item under "Provisions for the following systems shall be made"

From: "Second HF Communication System"

To: "Dual HF Communication System"

Page 90, Paragraph 3.17.1.1 CONTROL PANELS:

Delete the first item under "Description" "(Dual HF Communications Control)"

Add the following to the end of the paragraph:

"Provisions for the following control panel shall be made:

Dual HF Communication Control"

Page 96, Paragraph 3.17.1.7.1 DC POWER CONTROL:

Change the last four words in the fourth sentence as follows:

From: " the No. 1 HF equipment."

To: " provisions for a HF Communication system."

Page 97, Paragraph 3.17.2.2 HF COMMUNICATION EQUIPMENT:

Revise the paragraph title and paragraph as follows:

"HF COMMUNICATION EQUIPMENT (Provisions only): Provisions for two HF transceivers shall be made in the radio rack. Provisions for antenna tuning units shall be made as close as practicable to the flush antenna. Provisions for controls of HF Communication equipment shall be made in the radio control panel."

Page 104B, FIGURE 3.17-1 PILOT'S AND COPILOT'S PEDESTAL:

Revise the above figure to show provisions only for a dual HF Communication system.

Page 104C, FIGURE 3.17-3 ANTENNA ARRANGEMENT:

Revise above figure to show provisions for lightning arrestor relay assembly and provisions for HF Antenna Coupler No. 1, and provisions for HF Antenna Coupler Control No. 1.

Page A-5, APPENDIX I-C, ELECTRONIC EQUIPMENT:

Delete the following items under "HF COMMUNICATION:"

| | | |
|------------------------------------|---------|---------------|
| "1 Transceiver (18S-4) | Collins | |
| 1 Antenna Coupler (18OR-4) | Collins | 522-0532-004 |
| 1 Antenna Coupler Control (309A-1) | Collins | 522-0536-016" |

Page A-7, APPENDIX I-C, ELECTRONIC EQUIPMENT:

Delete the following item under "CONTROL PANELS" and delete the related foot note:

| | | |
|--------------|-----------------------------|----------|
| "1 HF Comm.* | Electronics Equip. Engr. | Type 268 |
|--------------|-----------------------------|----------|

CONVAIR: SD

Hughes Tool Company
Change No. 234

Page 3 of 3

*The HF Comm panel shall be interchangeable with a dual panel for use with the HF Communication equipment for which structural and space provisions are specified on page A-5."

Effect on Weight Empty: -86.0 pounds
Effect on Balance: -61,383 inch-pounds
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,265 DTD 23 May 1958

CHANGE NO: 233

MODEL: (880) 22-1

TITLE: Anti-Skid System, Revision to

ORIGIN: Delta requested and Convair proposed for TWA

REASON FOR CHANGE: As above

Cancelled

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * | |
|--|-----------------------|--|----------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | | |
| Proposal "A" -26.0 lb | Proposal "A" -26.0 lb | Proposal "A" -25,469 | Inch-lb |
| Proposal "B" -51.0 lb | Proposal "B" -51.0 lb | Proposal "B" -46,663 | INCH LB. |
| EFFECT ON GUARANTEED PERFORMANCE: * <u>None</u> | | | |
| <p>* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL</p> <p>ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:</p> | | <p>ENGINEERING APPROVAL</p> | |
| LATEST DATE OF ACCEPTANCE: | | AIRPLANES AFFECTED: | |
| SPECIAL PROVISIONS: | | <p>EFFECT ON PRICE PER AIRPLANE:</p> <p>RECURRING: _____</p> <p>NON-RECURRING: _____</p> <p>TOTAL: _____</p> | |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 233

Page 1 of 2

Title: Anti-Skid System, Revision to

Origin: Delta requested and Convair proposed for TWA

Reason for Change: As above

Description of Change:

PROPOSAL "A"

(Transistor automatic anti-skid system with skid indicator)

Page 34, Paragraph 3.8.2.2 WHEELS, BRAKES AND BRAKE CONTROL SYSTEMS:

Add the following after the third sentence:

"The brake pedal shall be equipped with a Goodyear "foot thumper" unit to indicate wheel skidding to the pilot".

Page A-12, APPENDIX I-C, HYDRAULIC EQUIPMENT:

Change the below two items in the Description List as follows:

| | | | |
|--------------|----------------------------------|------------|-----------|
| <u>From:</u> | "1 Anti-skid Control Valve | Hydro-Aire | 38-103 |
| | 4 Anti-skid Control Valve (Dual) | Hydro-Aire | 38-099" |
| <u>To:</u> | "9 Anti-skid Control Valves | Goodyear | SE4-1653" |

Effect on Weight Empty: -26.0 lbs
Effect on Balance: -25,469 Inch-lbs
Effect on Performance: None

PROPOSAL "B"

Page 34, Paragraph 3.8.2.2 WHEELS, BRAKES AND BRAKE CONTROL SYSTEMS:

Add the following after the third sentence:

"The brake pedal shall be equipped with a Goodyear "foot thumper" unit to indicate wheel skidding to the pilot"

Page A-12, APPENDIX I-C, HYDRAULIC EQUIPMENT:

Delete the following two items from the Description List:

| | | |
|----------------------------------|------------|---------|
| "1 Anti-skid Control Valve | Hydro-Aire | 38-103 |
| 4 Anti-skid Control Valve (Dual) | Hydro-Aire | 38-099" |

Effect on Weight Empty: -51.0 lbs
Effect on Balance: -46,663 Inch-lbs
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,310 DTD _____

CHANGE NO: 232

MODEL: (880) 22-1

| | | |
|---|------------------------------------|---|
| TITLE: <u>Adjustable Head Rest, Cabin Passenger Seats, Installation of</u> | | |
| ORIGIN: <u>Convair initiated.</u> | | |
| REASON FOR CHANGE: <u>To provide an optional adjustable head rest on cabin passenger seats.</u> | | |
| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
| GUAR. WT. EMPTY <u>162.0 lb</u> | OPER. WT. EMPTY <u>162.0 lb</u> | <u>141,912</u> INCH LB. |
| EFFECT ON GUARANTEED PERFORMANCE: * | | |
| None | | |
| * NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES: | | ENGINEERING APPROVAL |
| LATEST DATE OF ACCEPTANCE: | | AIRPLANES AFFECTED: |
| SPECIAL PROVISIONS: | | EFFECT ON PRICE PER AIRPLANE: RECURRING: _____ NON-RECURRING: _____ TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 232

Title: Adjustable Head Rest, Cabin Passenger Seats, Installation of

Origin: Convair initiated.

Reason for Change: To provide an optional adjustable head rest on
cabin passenger seats.

Description of Change:

Page 106, Paragraph 3.19.1.1.5 PASSENGER SEATS:

Add the following sentence to the end of the paragraph:

"An adjustable head rest shall be installed on each seat in the
main passenger compartment."

Effect on Weight Empty: 162.0 pounds
Effect on Balance: 141,912 inch-pounds
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,309 DTD _____

CHANGE NO: 231

MODEL: (880) 22-1

TITLE: Muslin Sub-Covers, Cabin Passenger Seats, Installation of

ORIGIN: TWA Mock-Up Seat Review at Convair on 10 September 1958

REASON FOR CHANGE: Customer request.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|------------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| <u>22.0 lb</u> | <u>22.0 lb</u> | <u>19,272</u> INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *
None

| | |
|--|----------------------|
| <p>* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL</p> <p>ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:</p> | ENGINEERING APPROVAL |
|--|----------------------|

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 231

Title: Muslin Sub-Covers, Cabin Passenger Seats, Installation of

Origin: TWA Mock-Up Seat Review at Convair on 10 September 1958

Reason for Change: Customer request.

Description of Change:

Page 105, Paragraph 3.19.1.1 SEATS:

Add the following sentence after the first sentence:

"A muslin sub-cover shall be bonded over each cabin passenger seat back cushioning material."

Effect on Weight Empty: 22.0 pounds
Effect on Balance: 19,272 inch-pounds
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,308 DTD _____

CHANGE NO: 230

MODEL: (880) 22-1

TITLE: **Crash Energy Absorber, Standard Cabin Passenger Seats, Installation of**

ORIGIN: **Joint Convair and National Seating design meeting with TWA on 18 July 1958**

REASON FOR CHANGE: **Customer request.**

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|-----------------------------------|-----------------------------------|-------------------------|
| GUAR. WT. EMPTY 44.0 lb | OPER. WT. EMPTY 44.0 lb | 738,544 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: * **None**

| | |
|---|----------------------|
| * NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL | |
| ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES: | ENGINEERING APPROVAL |

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---|---|
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|---|---|

ACCEPTED: _____ CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 230

Title: Crash Energy Absorber, Standard Cabin Passenger Seats,
Installation of

Origin: Joint Convair and National Seating design meeting with TWA
on 18 July 1958

Reason for Change: Customer request.

Description of Change:

Page 106, Add the following new paragraph to the page, after paragraph
3.19.1.1.6:

"3.19.1.1.6.1 CRASH ENERGY ABSORBER: All cabin passenger seats
shall be equipped with crash energy absorbers
installed at each safety belt attachment point."

Page A-14, APPENDIX I-C, FURNISHINGS:

Revise the ninth item in Description List as follows:

From: "84 Passenger Safety Belt"

To: "72 Passenger Safety Belts, and Crash Energy Absorbers
12 Passenger Safety Belts (Club Area)"

Effect on Weight Empty: ~~44~~.0 pounds
Effect on Balance: ~~38,544~~ inch-pounds
Effect on Performance: None

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CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,307 DTD _____

CHANGE NO: 229

MODEL: (880) 22-1

TITLE: Two-Position Foot Rest, Cabin Passenger Seats, Installation of

ORIGIN: Delta requested and Convair proposed for TWA

REASON FOR CHANGE: To propose optional cabin passenger seat item.

Rejected

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|-------------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| <u>482.0 lb</u> | <u>482.0 lb</u> | <u>470,274</u> INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 229

Title: Two-Position Foot Rest, Cabin Passenger Seats, Installation of

Origin: Delta requested and Convair proposed for TWA

Reason for Change: To propose optional cabin passenger seat item

Description of Change:

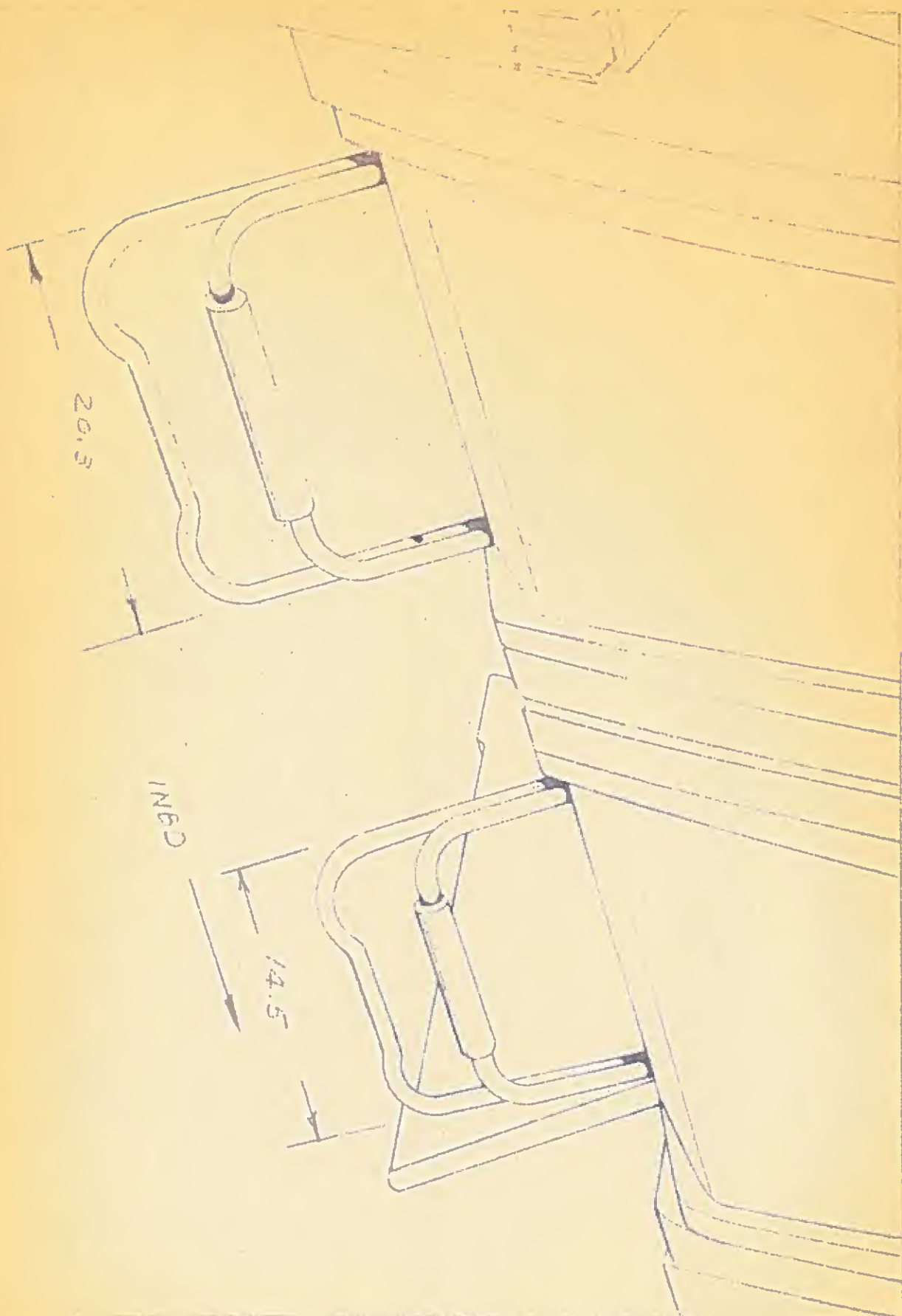
Page 106, Paragraph 3.19.1.1.5 PASSENGER SEATS:

Add the following sentence to the end of the paragraph:

"A two-position foot rest, attached to the rear beam of each cabin passenger seat structure, except last seat row, shall be installed for use of each main cabin passenger except those occupying the front row seats and those immediately aft of the movable coat dividers".

Enclosure: (A) One copy of sketch "CONVAIR 880 FOOT REST" (for information only)

Effect on Weight Empty: 482.0 lb
Effect on Balance: 470,274 inch-lb
Effect on Performance: None



CONWAY 860 - FOOT 288T

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,306 DTD _____

CHANGE NO: 228

MODEL: (880) 22-1

TITLE Stewardess Step, Cabin Passenger Seats, Installation of

ORIGIN: Joint Convair and National Seating design meeting with TWA on 18 July 1958.

REASON FOR CHANGE: Customer request.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | /25,404 INCH LB. |
| /29.0 lb | /29.0 lb | |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 228

Title: Stewardess Step, Cabin Passenger Seats, Installation of

Origin: Joint Convair and National Seating design meeting with TWA
on 18 July 1958.

Reason for Change: Customer request.

Description of Change:

Page 10⁶, Paragraph 3.19.1.1.5 PASSENGER SEATS:

Add the following sentence to the end of the paragraph:

"A stewardess step, including a removable one piece extruded section with back-up structure built into the inboard arm rest, shall be installed; one on each inboard seat in main passenger compartment, 18 on left hand side and 18 on right hand side".

Effect on Weight Empty: 429.0 lb
Effect on Balance: 425,404 inch-lb
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,307 DTD _____

CHANGE NO: 229

MODEL: (880) 22-1

TITLE: Two-Position Foot Rest, Cabin Passenger Seats, Installation of

ORIGIN: Delta requested and Convair proposed for TWA

REASON FOR CHANGE: To propose optional cabin passenger seat item.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|-------------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| <u>482.0 lb</u> | <u>482.0 lb</u> | <u>470,274</u> INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND
TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON
PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 229

Title: Two-Position Foot Rest, Cabin Passenger Seats, Installation of

Origin: Delta requested and Convair proposed for TWA

Reason for Change: To propose optional cabin passenger seat item

Description of Change:

Page 106, Paragraph 3.19.1.1.5 PASSENGER SEATS:

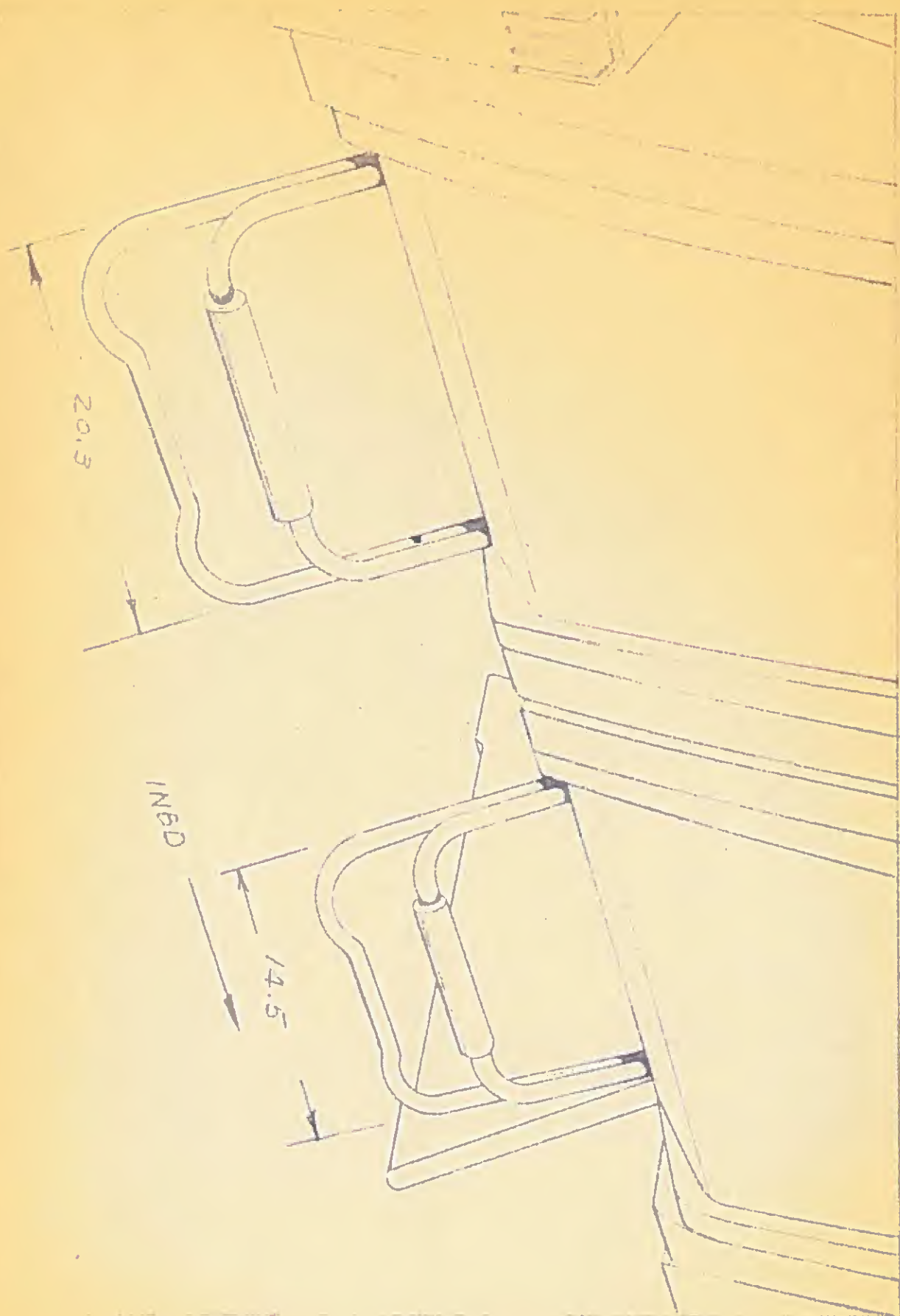
Add the following sentence to the end of the paragraph:

"A two-position foot rest, attached to the rear beam of each cabin passenger seat structure, except last seat row, shall be installed for use of each main cabin passenger except those occupying the front row seats and those immediately aft of the movable coat dividers".

Enclosure: (A) One copy of sketch "CONVAIR 880 FOOT REST" (for information only)

Effect on Weight Empty: 482.0 lb
Effect on Balance: 470,274 inch-lb
Effect on Performance: None

Enclosure to CCF No. 229



CONV. 6-2-2 - FORT 231T

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,308 DTD _____

CHANGE NO: 230

MODEL: (880) 22-1

TITLE: Crash Energy Absorber, Standard Cabin Passenger Seats, Installation of

ORIGIN: Joint Convair and National Seating design meeting with TWA on 18 July 1958

REASON FOR CHANGE: Customer request.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|-----------------------------------|-----------------------------------|-------------------------|
| GUAR. WT. EMPTY <u>44.0 lb</u> | OPER. WT. EMPTY <u>44.0 lb</u> | <u>438,544</u> INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *
None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:
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EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 230

Title: Crash Energy Absorber, Standard Cabin Passenger Seats,
Installation of

Origin: Joint Convair and National Seating design meeting with TWA
on 18 July 1958

Reason for Change: Customer request.

Description of Change:

Page 106, Add the following new paragraph to the page, after paragraph
3.19.1.1.6:

"3.19.1.1.6.1 CRASH ENERGY ABSORBER: All cabin passenger seats
shall be equipped with crash energy absorbers
installed at each safety belt attachment point."

Page A-14, APPENDIX I-C, FURNISHINGS:

Revise the ninth item in Description List as follows:

From: "84 Passenger Safety Belt"

To: "72 Passenger Safety Belts, and Crash Energy Absorbers
12 Passenger Safety Belts (Club Area)"

Effect on Weight Empty: ~~44~~.0 pounds
Effect on Balance: ~~38,544~~ inch-pounds
Effect on Performance: None

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except to meet the purpose for which it was delivered.

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,309 DTD _____

CHANGE NO. 231

MODEL: (880) 22-1

TITLE: Muslin Sub-Covers, Cabin Passenger Seats, Installation of

ORIGIN: TWA Mock-Up Seat Review at Convair on 10 September 1958

REASON FOR CHANGE: Customer request.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|-------------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| <u>436.0 lb</u> | <u>436.0 lb</u> | <u>431,536</u> INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 231

Title: Muslin Sub-Covers, Cabin Passenger Seats, Installation of

Origin: TWA Mock-Up Seat Review at Convair on 10 September 1958

Reason for Change: Customer request.

Description of Change:

Page 105, Paragraph 3.19.1.1 SEATS:

Add the following sentence after the first sentence:

"A muslin sub-cover shall be installed in each cabin passenger seat between the cushioning material and the upholstering material."

Effect on Weight Empty: 436.0 pounds
Effect on Balance: 431,536 inch-pounds
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,310 DTD _____

CHANGE NO: 232

MODEL: (880) 22-1

| | | |
|---|------------------------------------|---|
| TITLE <u>Adjustable Head Rest, Cabin Passenger Seats, Installation of</u> | | |
| ORIGIN <u>Convair initiated.</u> | | |
| REASON FOR CHANGE: <u>To provide an optional adjustable head rest on cabin passenger seats.</u> | | |
| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
| GUAR. WT. EMPTY <u>162.0 lb</u> | OPER. WT. EMPTY <u>162.0 lb</u> | <u>141,912</u> INCH LB. |
| EFFECT ON GUARANTEED PERFORMANCE: * <div style="text-align: center; margin-top: 10px;"><u>None</u></div> | | |
| * NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES: | | ENGINEERING APPROVAL |
| LATEST DATE OF ACCEPTANCE: _____ | | AIRPLANES AFFECTED: _____ |
| SPECIAL PROVISIONS: _____ | | EFFECT ON PRICE PER AIRPLANE: RECURRING: _____ NON-RECURRING: _____ TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 232

Title: Adjustable Head Rest, Cabin Passenger Seats, Installation of

Origin: Convair initiated.

Reason for Change: To provide an optional adjustable head rest on
cabin passenger seats.

Description of Change:

Page 106, Paragraph 3.19.1.1.5 PASSENGER SEATS:

Add the following sentence to the end of the paragraph:

"An adjustable head rest shall be installed on each seat in the
main passenger compartment."

Effect on Weight Empty: 162.0 pounds
Effect on Balance: 141,912 inch-pounds
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,304 DTD _____

CHANGE NO: 227

MODEL: (880) 22-1

TITLE: Temperature Measurement Plane Illustration, Inclusion of in Specification

ORIGIN: Convair initiated.

REASON FOR CHANGE: To incorporate Figure 3.20-5 into Specification

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| 0 | 0 | 0 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 227

Title: Temperature Measurement Plane Illustration, Inclusion of
in Specification

Origin: Convair initiated.

Reason for Change: To incorporate Figure 3.20-5 into Specification.

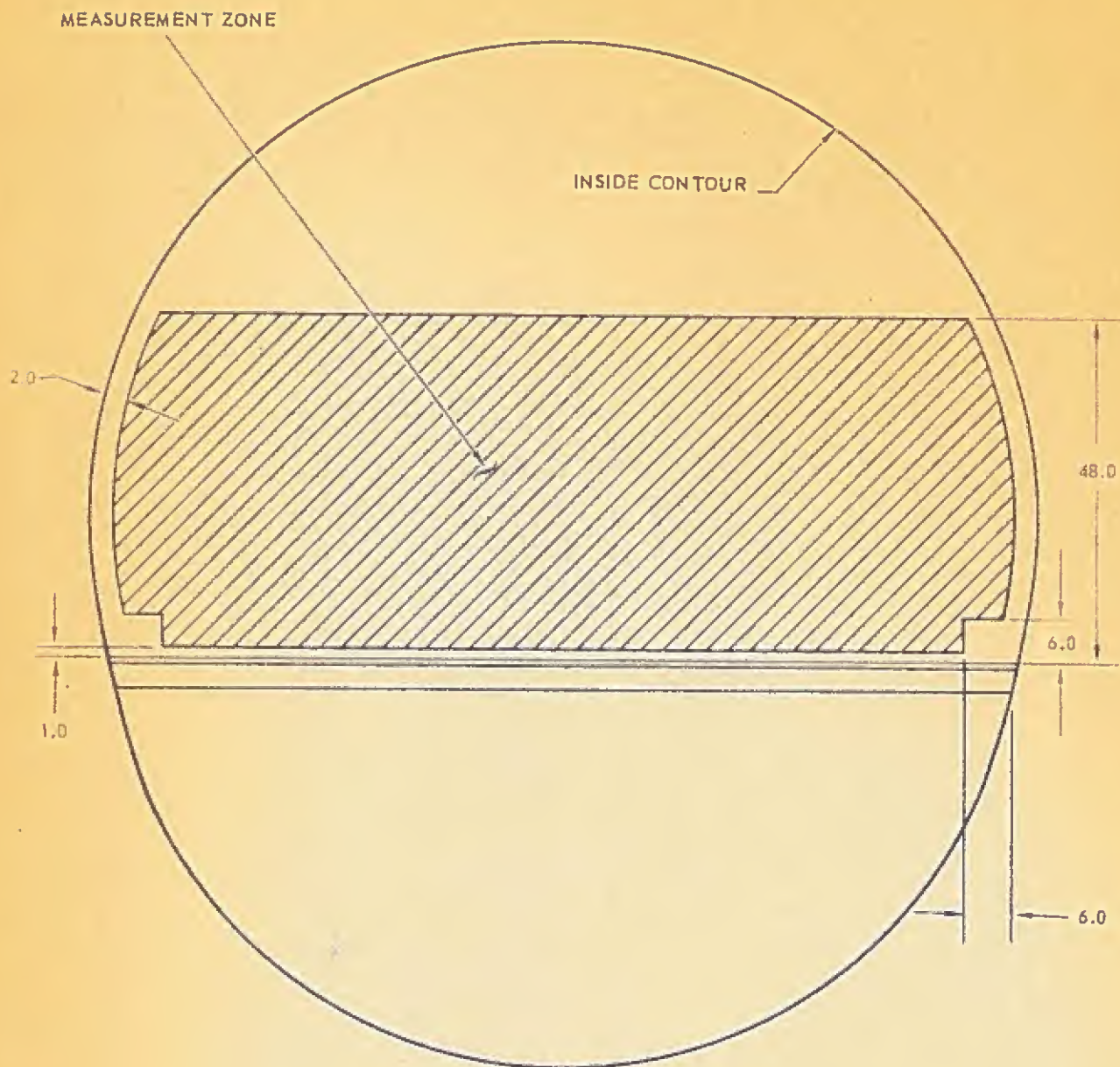
Description of Change:

Page 120, Paragraph 3.20.1.3.1 TEMPERATURE VARIATION:

In the second sentence, change "Figure 3.19-11" to "Figure 3.20-5"

Enclosure: (A) One copy Figure 3.20-5 - TEMPERATURE MEASUREMENT
PLANE (To be incorporated into Specification on
Customer approval thereof)

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None



- NOTES: 1. "FREE AIR TEMPERATURE" IS TEMPERATURE MEASURED AWAY FROM THE DIRECT INFLUENCE OF SUPPLY AIR JET TEMPERATURES.
2. THE LIMITING TEMPERATURE VARIATIONS SHALL BE APPLICABLE ONLY TO AN AIRPLANE CARRYING NO PASSENGERS.

TEMPERATURE MEASUREMENT PLANE

Figure 3.20-5

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,358 DTD 27 October 1958

CHANGE NO: 226

MODEL: (880) 22-1

TITLE: Puritan Oxygen Masks, Crew Supplemental, Installation of

ORIGIN: TWA requested by Letter Nos. 880-676, dated 14 July 1958, and 880S-292, dated 23 October 1958

REASON FOR CHANGE: Customer request.

EFFECT ON WEIGHT *

EFFECT ON BALANCE *

GUAR. WT. EMPTY

OPER. WT. EMPTY

4.0 lb

4.0 lb

1,170 INCH LB.

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 226

Title: Puritan Oxygen Masks, Crew Supplemental, Installation of

Origin: TWA requested by Letter Nos. 880-676, dated 14 July 1958 and
880S-292, dated 23 October 1958

Reason for Change: Customer request.

Description of Change:

Page 118, Paragraph 3.19.5.5 MASKS:

In the first line, change "four" to "three".

Page A-18, APPENDIX I-C, OXYGEN SYSTEM:

Add the following item to the Description List:

| | | |
|--|---------|---------|
| "3 Oxygen Mask Assembly (Crew Supplemental) | Puritan | 114020" |
|--|---------|---------|

| | |
|-------------------------|-------------------|
| Effect on Weight Empty: | 4.0 pounds |
| Effect on Balance: | 1,170 inch-pounds |
| Effect on Performance: | None |

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,353 DTD 2 October 1958

CHANGE NO: 225

MODEL: (880) 22-1

TITLE: ATC Transponder Panel, Revision to

ORIGIN: TWA requested by Letter No. 880-756, dated 2 October 1958

REASON FOR CHANGE: Customer request.

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | 0 INCH LB. |
| 0 | 0 | |

EFFECT ON GUARANTEED PERFORMANCE: *

None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED:

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 225

Title: ATC Transponder Panel, Revision to

Origin: TWA requested by Letter No. 880-756, dated 2 October 1958

Reason for Change: Customer request.

Description of Change:

Page A-7, APPENDIX I-C, ELECTRONIC EQUIPMENT:

Change the sixth item under "CONTROL PANELS" as follows:

From: "1 ATC Transponder Beacon Gables G-554"

To: "1 ATC Transponder Beacon Gables G-554V"

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,285 DTD 1 August 1958

CHANGE NO: 224

MODEL: (880)22-1

TITLE Lubber Line Reference on Polar Path Compass Flux Gate, Installation of

ORIGIN: TWA requested by Letter No. 880-666, dated 8 July 1958

REASON FOR CHANGE: Customer request

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| 0 | 0 | 0 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *
None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

ENGINEERING APPROVAL

| | |
|----------------------------|---------------------|
| LATEST DATE OF ACCEPTANCE: | AIRPLANES AFFECTED: |
| | |

| | |
|---------------------|-------------------------------|
| SPECIAL PROVISIONS: | EFFECT ON PRICE PER AIRPLANE: |
| | RECURRING: _____ |
| | NON-RECURRING: _____ |
| | TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

Title: Lubber Line Reference on Polar Path Compass Flux Gate,
Installation of

Origin: TWA requested by Letter No. 880-666, dated 8 July 1958

Reason for Change: Customer request

Description of Change:

Page 59, Paragraph 3.14.3.4.1 FLUX VALVE:

Revise the paragraph title and paragraph to read as follows:

"3.14.3.4.1 FLUX GATE: Two flux gate units shall be installed in one wing tip area with an access door on upper wing surface. The flux gate mounting brackets shall be designed to preclude deviation errors resulting from improper positioning of the flux gate unit. A centered arrow pointer (lubber line), inscribed on a small metal plate, shall be provided to indicate the relationship of the flux gate to the longitudinal axis of the airplane. Flux gate mounting and environment shall be such that the units will not be subjected to vibration or shock loads to a degree which would permit deterioration under all normal operating conditions. The installation shall be designed to preclude undue deterioration of the flux gate units as a result of vibration levels to be encountered in this area under normal operating conditions."

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

The following shall not appear in Specification language:

Opportunity was taken in this proposal to change the word "valve" to "gate" in paragraph 3.14.3.4.1. This will make word consistent with manufacturer's nomenclature.

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD-22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,352 DTD 1 October 1958

CHANGE NO: 223

MODEL: (880)22-1

TITLE: Turn and Bank Calibration, Revision to

ORIGIN: TWA requested by Letter No. 880S-259, dated 26 September 1958

REASON FOR CHANGE: Customer request

Rejected

| | | |
|---|----------------------|---|
| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
| GUAR. WT. EMPTY 0 | OPER. WT. EMPTY 0 | 0 INCH LB. |
| EFFECT ON GUARANTEED PERFORMANCE. * None | | |
| * NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES: | | ENGINEERING APPROVAL |
| LATEST DATE OF ACCEPTANCE: | | AIRPLANES AFFECTED: |
| SPECIAL PROVISIONS: | | EFFECT ON PRICE PER AIRPLANE: RECURRING: _____ NON-RECURRING: _____ TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

Title: Turn and Bank Calibration, Revision to

Origin: TWA requested by Letter No. 880S-259, dated 26 September 1958

Reason for Change: Customer request

Description of Change:

Page A-10, APPENDIX I-C, INSTRUMENTS AND RELATED EQUIPMENT:

Revise the bottom item on the page as follows:

From: "2 Turn and Bank Indicators (electric) Pioneer 3919-1AE-B1-2"
Central

To: "2 Turn and Bank Indicators (electric) Pioneer Central"
(calibration to 5/32-inch for 180° per minute)

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None

The following shall not appear in the Specification language:

Part number for proposed instrument will be furnished when
available after Customer acceptance of this Change No. 223.

NOTE: The effects of CCP No. 178 are included in this
proposal.

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,295 DTD 22 September 1958

CHANGE NO: 222

MODEL: (880)22-1

TITLE: Audible Altitude Warning Signal, Incorporation of

ORIGIN: TWA requested by Letter, Crissman to Eastland, dated 30 July 1958

REASON FOR CHANGE: Customer request

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|---|-----------------|-------------------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | Negligible INCH LB. |
| 1.0 lb | 1.0 lb | |
| EFFECT ON GUARANTEED PERFORMANCE: * | | |
| None | | |
| * NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES: | | ENGINEERING APPROVAL |
| LATEST DATE OF ACCEPTANCE: | | AIRPLANES AFFECTED: |
| SPECIAL PROVISIONS: | | EFFECT ON PRICE PER AIRPLANE: |
| | | RECURRING: _____ |
| | | NON-RECURRING: _____ |
| | | TOTAL: _____ |

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

Title: Audible Altitude Warning Signal, Incorporation of

Origin: TWA requested by Letter, Crissman to Eastland, dated 30 July 1958

Reason for Change: Customer request

Description of Change:

Page 80, Paragraph 3.16.11.1 LANDING GEAR AND STABILIZER WARNING HORN:

Revise the paragraph title to read as follows:

"LANDING GEAR, STABILIZER AND CABIN ALTITUDE WARNING HORN:"

Add the following sentence to the end of the paragraph:

"The warning horn shall also be utilized to give a warning signal in event of a cabin pressurization failure. A selector switch shall be provided to isolate the horn from the other systems when the alarm is actuated for cabin altitude warning only."

Page 125, Paragraph 3.20.3.1 PRESSURIZATION:

Add the following sentence to the end of the paragraph:

"An audible warning signal shall be provided to indicate a cabin pressurization failure, as defined in Paragraph 3.16.11.1."

| | |
|-------------------------|------------|
| Effect on Weight Empty: | +1.0 lb |
| Effect on Balance: | Negligible |
| Effect on Performance: | None |

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION
SAN DIEGO, CALIFORNIA

COMMERCIAL CHANGE PROPOSAL

SPEC NO.: ZD- 22-002

DATE: _____

CUSTOMER: Hughes Tool Company

MCL 10,293 DTD 11 September 1958

CHANGE NO: 221

MODEL: (880) 22-1

TITLE Buffet Ovens, Revision to

ORIGIN: TWA requested by Letter No. 880-741, dated 16 September 1958, and meeting between TWA and Convair representatives on 16 September 1958

REASON FOR CHANGE: Customer request

| EFFECT ON WEIGHT * | | EFFECT ON BALANCE * |
|--------------------|-----------------|---------------------|
| GUAR. WT. EMPTY | OPER. WT. EMPTY | |
| 0 | 0 | 0 INCH LB. |

EFFECT ON GUARANTEED PERFORMANCE: *
None

* NEGLIGIBLE CHANGES WILL BE ACCUMULATED AND TOTALS REFLECTED IN A FUTURE CHANGE PROPOSAL

ACCEPTANCE OF THIS CHANGE IS DEPENDENT UPON PRIOR ACCEPTANCE OF THE FOLLOWING CHANGES:

ENGINEERING APPROVAL

LATEST DATE OF ACCEPTANCE:

AIRPLANES AFFECTED:

SPECIAL PROVISIONS:

EFFECT ON PRICE PER AIRPLANE:

RECURRING: _____

NON-RECURRING: _____

TOTAL: _____

ACCEPTED: _____

CONVAIR, A DIVISION OF GENERAL DYNAMICS CORP.

BY: _____

DATE: _____

CONVAIR: SD

Hughes Tool Company
Change No. 221

Title: Buffet Ovens, Revision to

Origin: TWA requested by Letter No. 880-741, dated 16 September 1958,
and meeting between TWA and Convair representative on 16
September 1958

Reason for Change: Customer request.

Description of Change:

This proposal which provides interchangeability between Boeing
"707" buffet ovens and Convair "880" buffet ovens, has no effect
on Specification language.

The minimum dimensions of the oven cavities are as follows:

NO. 1 & 2 BUFFETS

23.0 inches wide
18.6 inches high
16.6 inches deep

NO. 3 BUFFET

15.8 inches wide
18.6 inches high
16.6 inches deep

Effect on Weight Empty: 0
Effect on Balance: 0
Effect on Performance: None